URS

DOCKET	
09-AFC-1	
DATE	JUL 21 2011
RECD.	JUL 22 2011

July 21, 2011

Dockets Unit
California Energy Commission
1516 Ninth Street, MS 4
Sacramento, CA 95814-5512

Re: Watson Cogeneration Steam and Electric Reliability Project
Application for Certification 09-AFC-1

On behalf of Watson Cogeneration Company, the applicant for the above-referenced Watson Cogeneration Steam and Electric Reliability Project, we are pleased to submit the following:

- Responses to June 30, 2011 LARWQCB Response to CEC Participation Request.

This document is being submitted to the CEC for docketing.

In accordance with the CEC's June 10, 2011 Committee Order Adopting Filing and Electronic Documents Directives, one paper copy and one compact disc (CD) is being filed with the Dockets Unit. The Proof of Service distribution will receive CDs. Paper copies will be issued upon request.

Sincerely,
URS Corporation

Cindy Kyle-Fischer
Project Manager

Enclosure

cc: Proof of Service List

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RESPONSES TO JUNE 30, 2011 LARWQCB RESPONSE TO CEC PARTICIPATION REQUEST APPLICATION FOR CERTIFICATION (09-AFC-1)

for Watson Cogeneration Steam and Electric Reliability Project

Submitted to:
California Energy Commission
1516 9th Street , MS 15
Sacramento, CA 95814-5504

Submitted by:
Watson Cogeneration Company
22850 South Wilmington Avenue
Carson, CA 90745

With support from:
URS Corporation
8181 East Tufts Avenue
Denver, CO 80237

July 2011

Responses to June 30, 2011 LARWQCB Response to CEC Participation Request

Tables (in order of appearance)

Figures (in order of appearance)

Appendices

List of Acronyms and Abbreviations Used in Responses

AFC	Application for Certification
Applicant	Watson Cogeneration Company
BP	British Petroleum
BP Refinery	BP Carson Refinery
CAO	Cleanup and Abatement Order
CEC	California Energy Commission
CPT	cone penetrometer testing
DESCP	Draft Drainage, Erosion, and Sediment Control Plan
ft^2/day	square feet per day
LARWQCB	Los Angeles Region of the California Regional Water Quality Control Board
LIF	Laser Induced Fluorescence
LNAPL	Light Non-Aqueous Phase Liquid
Project	Watson Cogeneration Steam and Electric Reliability Project
ROST™	Rapid Optical Screening Test

INTRODUCTION

The proposed location of the Watson Cogeneration Steam and Electric Reliability Project (the Project) comprises a small portion (2.5 acres) of the 21.7-acre Watson Cogeneration Facility. The Watson Cogeneration Facility is within the 428-acre parcel on which British Petroleum (BP) Carson Refinery (BP Refinery) is located. The BP Refinery is under Cleanup and Abatement Order (CAO) Number 90-121, issued by the Los Angeles Region of the California Regional Water Quality Control Board (LARWQCB). The BP Refinery is conducting ongoing assessment and remedial activities on the refinery per the CAO under the jurisdiction of the LARWQCB with Environmental Protection Agency involvement.

On May 31, 2011, the California Energy Commission (CEC) submitted a request to the LARWQCB for their participation in the Project. The CEC's letter contained specific questions regarding the LARWQCB's view of the Project. On June 30, 2011, the LARWQCB submitted a response to the CEC.

Watson Cogeneration Company (the Applicant) has prepared this response document to provide information to LARWQCB and to respond to the points the LARWQCB made in their response. Some of the Applicant's responses include re-prints of relevant portions of previously-published documents. The referenced documents in their entirety are publicly available through the following link to the Project's web page on the CEC's website:
http://www.energy.ca.gov/sitingcases/watson/documents/index.html

WASTE MANAGEMENT

CEC QUESTION

1. Does LARWQCB anticipate any problems with the project?

LARWQCB RESPONSE

Yes. The project location is within the BP Carson Refinery located 2350 E. 223rd Street in the city of Carson. The BP Carson Refinery has historical soil and groundwater contamination at the site, and BP is currently conducting site investigations and cleanups under the Regional Board's Orders including Cleanup and Abatement Order (CAO) No. 90-121. Therefore, staff believes that construction activities at the site could have an adverse impact on the onsite cleanup activities; it will increase the threat to groundwater quality and human health risks.

APPLICANT RESPONSE

BP has been working closely with LARWQCB to implement the CAO. The LARWQCB has not required BP to excavate soil at the proposed location of the Project. As stated in the Applicant's 2009 Application for Certification (AFC) and in the Applicant's June 2010 Responses to Questions from CEC Staff (Question 3), the excavation for Project construction will not extend more than 10 feet below the existing grade.

Neither the construction of the Project nor the subsequent operation of the Project would be expected to contribute to the threat of groundwater quality nor would it be expected to increase human health risks. Construction and soil management will be compliant with current refinery soil management procedures, health and safety regulatory requirements, and worker protection. These procedures will ensure compliance with applicable environmental, and health and safety regulatory requirements.

Any excavated soil will be managed pursuant to applicable BP Refinery soils management plans, and health and safety of site personnel will be managed in accordance with the site-specific health and safety plan and applicable refinery procedures.

Because there is no planned on-site reuse of soil excavated for the foundation of the fifth train or other areas identified for this Project and clean soil or aggregate will be imported to the Project Site for backfilling of the excavation(s), this aspect of Project construction will not increase human health risks associated with impacted soil. All excavated soil for this Project will be transported off-site for treatment or disposal at a BP-approved facility.

Project construction activities will not increase the threat to groundwater quality. Soil excavation may remove impacted soil. Excavated soil will be transported off site and will not be a continuing source to groundwater. The Project Site is underlain by several aquitards that impede downward migration of groundwater. Both the BP Refinery conceptual site model and groundwater flow model developed by the Carson Regional Groundwater Group show that groundwater from the beneath the portion of the Project Site where the fifth train will be located

flows southwestward and is captured by the recovery system operated by the BP Refinery. As any impacted groundwater beneath this portion of the Project Site will be captured and remediated, the Project will not increase the threat to groundwater quality.

The 1986 *Report of Final Geotechnical Investigation, Proposed Cogeneration Unit and Proposed Transmission Line, Watson Refinery* by LeRoy Crandall and Associates, described the results of the geotechnical investigation that was performed prior to construction of the existing Watson Cogeneration Facility (the original four trains). The areal extent of the investigation included the Project Site. The report was filed with the Project's 2009 AFC as Appendix L (Geotechnical Report) and is available on the CEC's website. This report noted difficulty in determining the exact depth of the fill due to similarity between the soils of the fill and the underlying natural soils. The associated boring logs noted traces of oil and petroleum odor at varying depths near the proposed location of the fifth train. Quantitative chemical analyses were not performed on the soil samples.

Construction of the Project will be preceded by a geotechnical investigation. Because Project construction will take place over a former reservoir, just as construction of adjacent Cogeneration Units No. 1 though No. 4 previously, soil samples will be collected during the Project geotechnical assessment activities and subsurface soils will be screened for petroleum hydrocarbon impacts. Sampling will be completed in areas where ground disturbance is planned within the Project footprint. The results of the sampling will provide soil data specific to the Project Site. Soil will also be screened for volatile organic compounds and characterized for disposal during excavation.

CEC QUESTION

2. Does LARWQCB believe that project site surface or subsurface contaminants could be distributed and released into the environment or present a health risk exposure?

LARWQCB RESPONSE

Yes, we believe so in terms of soil excavation or disturbance. In order to better evaluate the specific site contamination and possible health risk issues, staff needs to evaluate all soil and groundwater data at the specific project area.

APPLICANT RESPONSE

As the Applicant noted in the response to Question 1, construction and soil management will be compliant with current refinery soil management procedures, health and safety regulatory requirements, and worker protection. During excavation, soil will be monitored and characterized for disposal. The Applicant filed a copy of the BP Refinery's soil management procedures with the CEC in the Applicant's June 2010 Responses to Questions from CEC Staff. These procedures will ensure compliance with applicable environmental, and health and safety regulatory requirements.

Aside from a single groundwater monitoring well located near the cooling towers, there are no groundwater monitoring wells within the footprint of the Watson Cogeneration Facility (including the proposed Project Site). Groundwater monitoring wells are present in the surrounding areas of the refinery including wells directly downgradient of the Project Site.

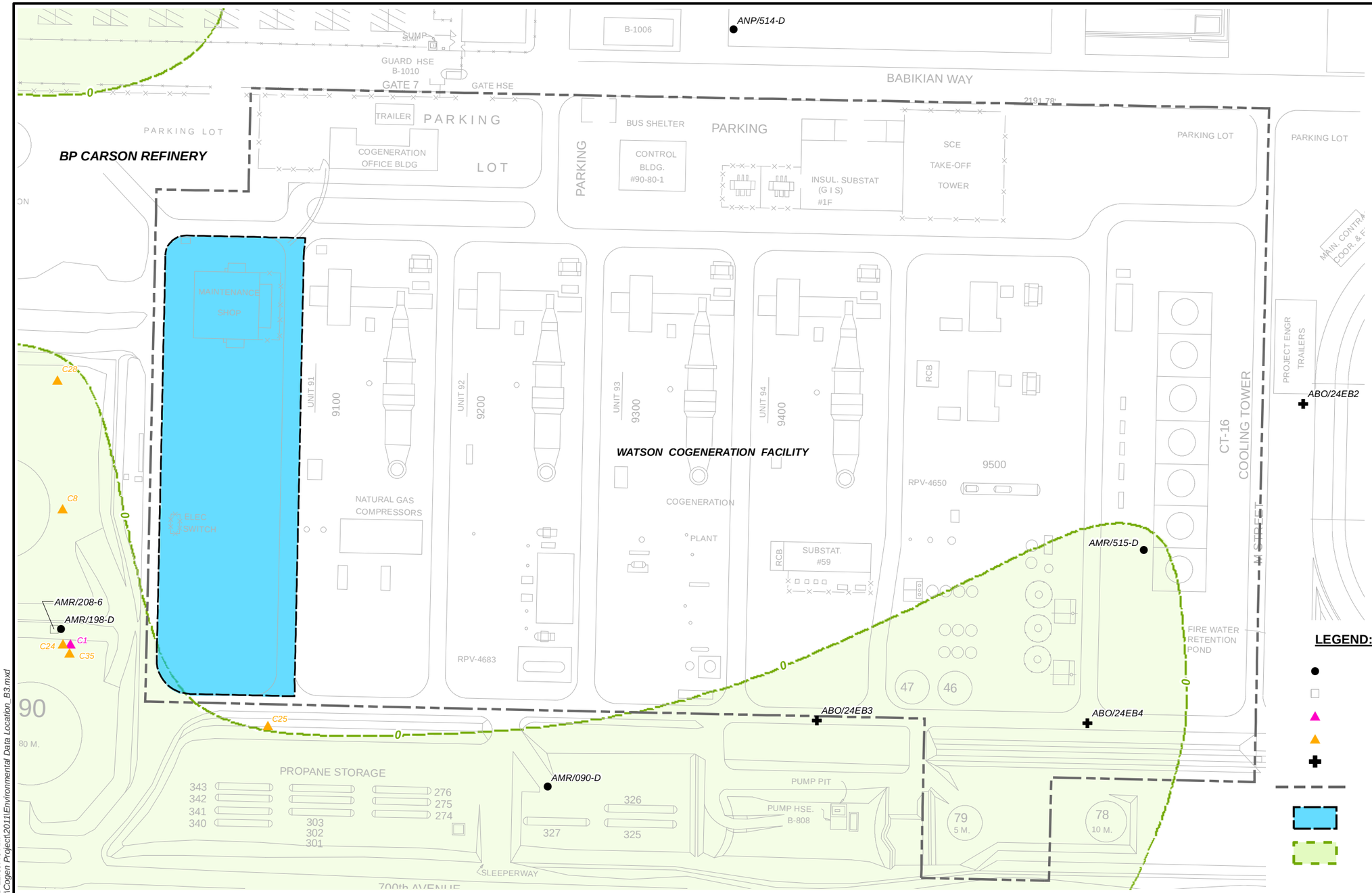
The BP Refinery has been submitting groundwater monitoring data to LARWQCB on a quarterly or semiannual basis since 1986. These data are reported in refinery subsurface progress reports. Progress reports from 2005 to present are electronically available in the GeoTracker database. In addition, recent reports contain a compilation of historical groundwater data. The GeoTracker database is accessible from the following page of the LARWQCB website:
http://www.waterboards.ca.gov/losangeles/resources/public_records_center.shtml

The database is also accessible from the following link within the California State Water Resources Control Board web site:
http://geotracker.waterboards.ca.gov/

Figure 2-1, Environmental Data Location, presents the locations of environmental soil borings and existing groundwater wells near the Project Site. Plate 1, Plot Plan, from the 1986 geotechnical report for the existing Watson Cogeneration Facility, presents the locations of the 1985 geotechnical soil borings throughout the Watson Cogeneration Facility, including the Project Site. It has been reprinted in this document for convenient reference. The entire report was filed with the Project's 2009 AFC as Appendix L (Geotechnical Report) and is available on the CEC's website. Table 2-1, Summary of Environmental Data Near Project Site, identifies the

corresponding data reports that were previously filed with either the CEC or the LARWQCB. Appendix A in this response document contains a compilation of monitoring well gauging data (which presents water levels and measured thickness of light non-aqueous phase liquid [LNAPL]) and soil, groundwater and LNAPL analytical data. Appendix B in this response document contains monitoring well logs and logs from the locations of cone penetrometer testing (CPT) and Rapid Optical Screening Test (ROST™) Laser Induced Fluorescence (LIF) testing (which detects petroleum hydrocarbons). No soil vapor data was found for the Project Site or the existing Watson Cogeneration Facility.

Additional soil data will be obtained during the Project geotechnical assessment, which will be performed prior to construction.



LEGEND:

- WATER TABLE AQUIFER MONITORING WELL
- ACTIVE WATER TABLE AQUIFER RECOVERY WELL
- 2001 - CPT/ROST LOCATION
- 2003 - CPT/ROST LOCATION
- ENVIRONMENTAL BORING LOCATION
- WATSON COGENERATION FACILITY BOUNDARY
- FIFTH TRAIN LOCATION
- INFERRED LNAPL EXTENT IN WATER TABLE

N

120 60 0 120 Feet

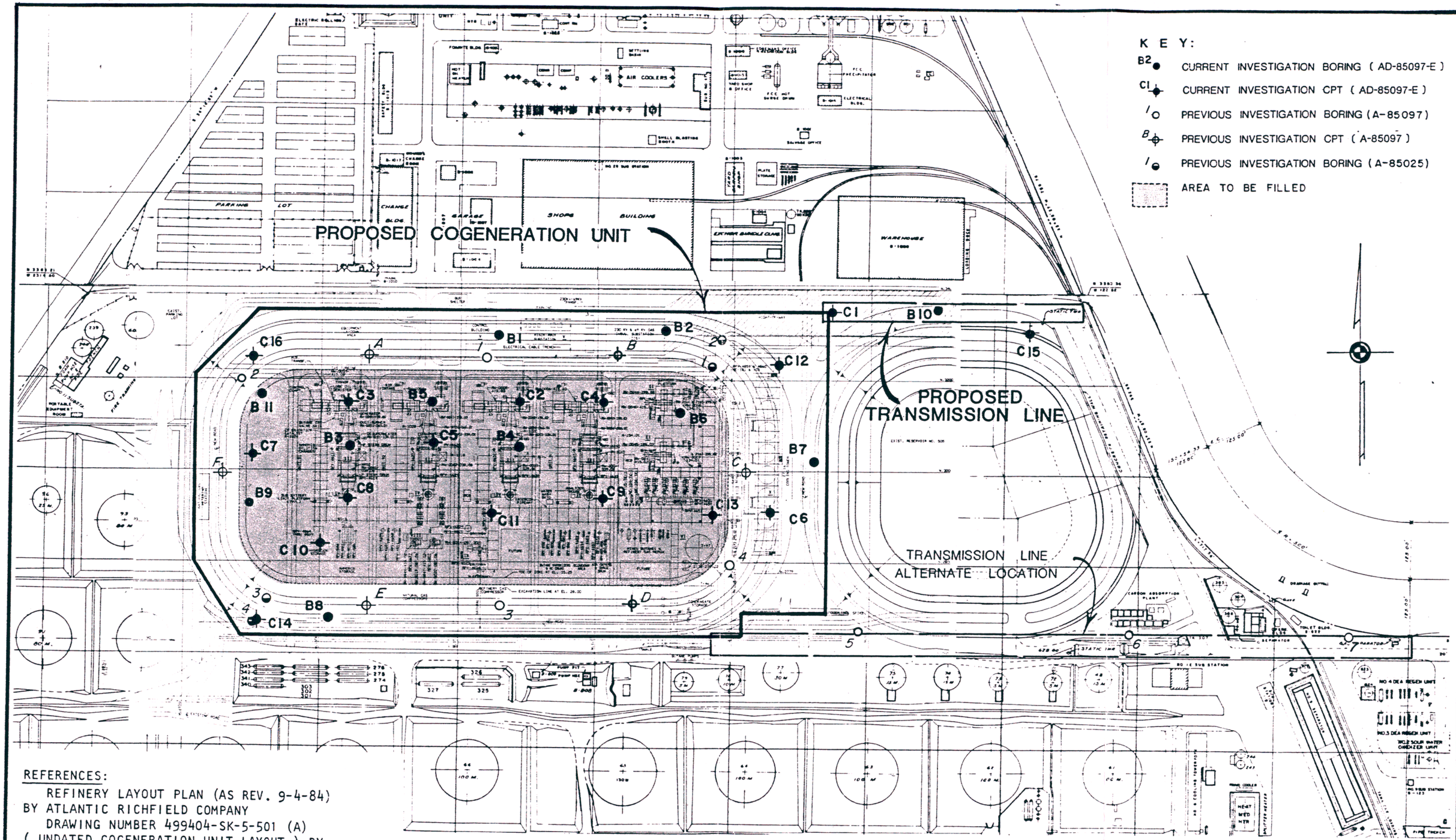
WATSON COGENERATION
STEAM AND ELECTRIC RELIABILITY PROJECT

ENVIRONMENTAL DATA LOCATION

PROJECT NO.	DRAWN BY:	DATE:	FIGURE 2-1
60188866-1250	SM	7/20/11	

AECOM

User: mexias Date: Wednesday, July 20, 2011 11:39:40 AM
File: T:\BP\Carson\Projects\Strategic Support\Cogen Project\2011\Environmental Data Location_B3.mxd



K E Y:

- B2 ● CURRENT INVESTIGATION BORING (AD-85097-E)
- C1 ⊕ CURRENT INVESTIGATION CPT (AD-85097-E)
- / ○ PREVIOUS INVESTIGATION BORING (A-85097)
- B ⊕ PREVIOUS INVESTIGATION CPT (A-85097)
- / ● PREVIOUS INVESTIGATION BORING (A-85025)
- AREA TO BE FILLED

REFERENCES:

REFINERY LAYOUT PLAN (AS REV. 9-4-84) BY ATLANTIC RICHFIELD COMPANY
DRAWING NUMBER 499404-SK-5-501 (A) (UNDATED COGENERATION UNIT LAYOUT) BY FLUOR ENGINEERS, INC.
SOIL BORING LOCATION PLAN (AS REV. 3-11-86) BY FLUOR ENGINEERS, INC.

NOTE: B.M. FOR BOR. ELEVS. (BORS. BI THROUGH BII)
BR. DISC AT N 3925 W 800 DN. 24" ELEV.=27.03

PLOT PLAN

SCALE 1" = 200'

LeROY CRANDALL AND ASSOCIATES

PLATE 1

Table 2-1
Summary of Environmental Data Near Project Site

Medium	Sample ID	Citation
Soil (geotechnical)	B9, B11, C7, C14, C16	*Report of Final Geotechnical Investigation Proposed Cogeneration Unit and Proposed Transmission Line Watson Refinery*, Carson, California, for the Atlantic Richfield Company (LeRoy Crandall and Associates, 1986)[2]
Soil (chemical)	ABO/24EB2, ABO/24EB3, ABO/24EB4, ANP/514-D, AMR/515-D	BP Carson Refinery Environmental Database
	AMR/198-D	*Oxygenates Occurrence and LNAPL Mobility Evaluation Report*, BP Carson Refinery (The RETEC Group Inc., 2004)
Soil (ROST™ LIF)	C1, C8, C24, C25, C28, C35	Appendix B of this response document
Soil Vapor	NA	NA
Groundwater	AMR/090-D, AMR/198-D, ANP/514-D, AMR/515-D	Appendix A of this response document
	Site wide[1]	http://geotracker.waterboards.ca.gov/
LNAPL (gauging)	AMR/090-D, AMR/198-D, ANP/514-D, AMR/515-D	Appendix A of this response document
LNAPL (transmissivity)	AMR/090-D, AMR/198-D, AMR/208-6, AMR/515-D	*2010 Annual Refinery Subsurface Cleanup Progress Report* (AECOM Environment, 2011) http://geotracker.waterboards.ca.gov/
LNAPL (chemical)	AMR/090-D, AMR/198-D (2007)	Appendix A of this response document
	AMR/198-D (2001 and 2003)	*Oxygenates Occurrence and LNAPL Mobility Evaluation Report*, BP Carson Refinery (The RETEC Group Inc., 2004)

Source: BP Carson Refinery and Watson Cogeneration Steam and Electric Reliability Project Team, 2011.

Notes:

[1] Groundwater monitored on a site-wide basis at multiple wells.

[2] This report was filed with the CEC as Appendix L of the Project's 2009 AFC.

Abbreviations:

ROST™ LIF = Rapid Optical Screening Test Laser Induced Fluorescence
NA = Not Available in Project area
LNAPL = Light Non-Aqueous Phase Liquid

CEC QUESTION

3. What type of information would LARWQCB expect the applicant to provide prior to the completion of the staff assessment?

LARWQCB RESPONSE

Regional Board staff recommends reviewing the following: (1) the construction plan (e.g., layout, grading plan); (2) the soil management plan; (3) the health and safety plan; (4) the contingency plan for well replacement; and (5) any existing soil vapor, soil and groundwater contamination data at the proposed project area.

APPLICANT RESPONSE

(1) The preliminary construction plan (e.g., layout, grading plan) was previously filed with the CEC as Figure 3-10, Preliminary Drainage Plan, within Section 3 (Project Description) of the March 2009 AFC. In response to CEC Data Request 32, the Applicant prepared a Preliminary Draft Drainage, Erosion, and Sediment Control Plan (DESCP), which contained refinements to the construction plan. The DESCP was filed within the Applicant's January 2010 Responses to CEC Data Request Set 1 (32) and Set 2 (40-48). Figures 4 through 6 (Drainage Map – Project Site; Drainage Map – Construction Laydown and Parking Area; and Clearing and Grading Map) from the DESCP have been re-printed within Appendix C of this document for convenient reference. Because the Project Site is already developed, grading prior to construction will not be necessary. Only minor grading will be needed after construction to ensure surface water drains properly. No earthwork activity is anticipated for the Construction Laydown and Parking Area.

(2) The soil management plan was filed with the CEC within the Applicant's June 2010 Responses to Questions from CEC Staff (Question 6). It consisted of the BP Refinery's Procedure E107 (Soils Handling) and Procedure E112 (Excavation Planning and Soils Management). These documents have been re-printed within this document for convenient reference as Appendix D.

(3) The health and safety of site personnel will be managed in accordance with BP Refinery's site-specific health and safety procedures. A project-specific Health and Safety Plan will be developed prior to any construction taking place and will be provided prior to initiating construction activities.

(4) A contingency plan for well replacement is unnecessary as there are no wells within the Project Site.

(5) As previously noted in the response to Question 2, the existing groundwater data are publicly available in the GeoTracker system. An investigation report that included soil and LNAPL data was filed with the LARWQCB in 2004. The Applicant has presented a summary table of the types of available data from the Project Site, nearby areas, and the nearest borings and downgradient wells in the response to Question 2.

CEC QUESTION

4. Would LARWQCB propose additional project site mitigation (i.e., cleanup/remediation) by the applicant?

LARWQCB RESPONSE

Possibly, depending on whether the construction will intersect with the contamination.

APPLICANT RESPONSE

BP is conducting ongoing assessment and remedial activities on the refinery property (which includes the Watson Cogeneration Facility) per the CAO under the jurisdiction of the LARWQCB. The objective of the remedial activities is to contain contamination upgradient of the property boundaries. Source treatment/removal is conducted as needed for protection of human health and the environment. As described in the response to Question 1, any contaminated soil that is encountered within the planned excavation for construction of project facilities will be removed and transported off site for treatment and disposal—this approach is consistent with the remedial objectives stated above.

The monitoring well within the Watson Cogeneration Facility and two downgradient monitoring wells contain LNAPL. LNAPL recovery has been conducted at all of these wells. LNAPL recovery at the BP Refinery is evaluated on the basis of LNAPL transmissivity. The LNAPL transmissivity of these wells ranges from 0.0025 to 0.027 square feet per day (ft^2/day) which is below the threshold for active recovery. LNAPL and contaminated groundwater is actively recovered at well AMR/208-6 which has an LNAPL transmissivity of 0.48 ft^2/day. The most recent LNAPL transmissivity data are presented in the *2010 Annual Refinery Subsurface Cleanup Progress Report* which is electronically available in the GeoTracker database.

In addition, the Project Site is adjacent to the North Tank Farm area of the BP Refinery where remedial action has already been implemented to mitigate groundwater contamination. The North Tank Farm remedial action includes recovery wells that would capture any groundwater contamination that may migrate from beneath the portion of the Project Site where the fifth train will be located. BP is preparing a report for the North Tank Farm that will detail the effectiveness of the recovery system and identifies the source(s) of groundwater contamination in the area.

CEC QUESTION

5. Does the CAO cover the proposed project site such that the applicant would not have to complete additional remediation of this project?

LARWQCB RESPONSE

The CAO is for on and offsite contamination that originated from the BP Carson Refinery.

APPLICANT RESPONSE

As stated in the previous response, BP is conducting ongoing assessment and remedial activities on the refinery property (which includes the Watson Cogeneration Facility) per the CAO.

CEC QUESTION

6. Does LARWQCB have any information on contaminants in monitoring wells or groundwater pumping wells?

LARWQCB RESPONSE

Yes, we have data.

APPLICANT RESPONSE

As previously noted in the response to Question 2, groundwater data from 2005 forward is publicly available on the GeoTracker database. The Applicant also provided a summary table of the types of available data from the Project Site and nearby areas in the response to Question 2.

APPENDIX A
ENVIRONMENTAL DATA SUMMARY

Table A-1
Groundwater Gauging Data
May 1988 through October 2010
BP Carson Refinery

Well ID	Date Measured	Reference Elevation (feet msl)	Depth to Oil (feet)	Depth to Water (feet)	Measured Oil Thickness (feet)	Oil Elevation (feet msl)	Water Elevation (feet msl)	Poten-tiometric Surface Elevation (feet msl)
AMR/090-D	5/6/1988	34.56	62.83	71.02	8.19	-28.27	-36.46	-30.32
AMR/090-D	8/1/1988	34.56	62.77	70.58	7.81	-28.21	-36.02	-30.16
AMR/090-D	11/17/1988	34.56	62.31	69.85	7.54	-27.75	-35.29	-29.64
AMR/090-D	2/14/1989	34.56	62.17	69.52	7.35	-27.61	-34.96	-29.45
AMR/090-D	5/9/1989	34.56	61.94	69.67	7.73	-27.38	-35.11	-29.31
AMR/090-D	8/29/1989	34.56	62.84	70.97	8.13	-28.28	-36.41	-30.31
AMR/090-D	11/20/1989	34.56	62.66	69.64	6.98	-28.10	-35.08	-29.85
AMR/090-D	4/17/1990	34.56	62.50	69.39	6.89	-27.94	-34.83	-29.66
AMR/090-D	8/14/1990	34.56	62.16	69.25	7.09	-27.60	-34.69	-29.37
AMR/090-D	11/26/1990	34.56	61.99	69.09	7.10	-27.43	-34.53	-29.21
AMR/090-D	4/15/1991	34.56	62.23	69.45	7.22	-27.67	-34.89	-29.48
AMR/090-D	11/15/1991	34.56	63.40	70.02	6.62	-28.84	-35.46	-30.50
AMR/090-D	4/27/1992	34.56	60.54	69.08	8.54	-25.98	-34.52	-28.12
AMR/090-D	12/30/1992	34.56	60.71	69.22	8.51	-26.15	-34.66	-28.28
AMR/090-D	4/23/1993	34.56	58.23	68.07	9.84	-23.67	-33.51	-26.13
AMR/090-D	11/15/1993	34.56	57.10	68.30	11.20	-22.54	-33.74	-25.34
AMR/090-D	4/15/1994	34.56	55.25	67.75	12.50	-20.69	-33.19	-23.82
AMR/090-D	10/24/1994	34.56	56.08	69.17	13.09	-21.52	-34.61	-24.79
AMR/090-D	6/27/1995	34.56	55.33	70.50	15.17	-20.77	-35.94	-24.56
AMR/090-D	10/25/1995	34.56	56.75	70.00	13.25	-22.19	-35.44	-25.50
AMR/090-D	4/28/1996	34.56	57.54	59.83	2.29	-22.98	-25.27	-23.55
AMR/090-D	10/10/1996	34.56	60.08	70.21	10.13	-25.52	-35.65	-28.05
AMR/090-D	3/11/1997	34.56	60.30	70.28	9.98	-25.74	-35.72	-28.24
AMR/090-D	4/2/1997	34.56	60.35	70.20	9.85	-25.79	-35.64	-28.25
AMR/090-D	10/27/1997	34.56	60.40	70.40	10.00	-25.84	-35.84	-28.34
AMR/090-D	4/20/1998	34.56	59.90	70.40	10.50	-25.34	-35.84	-27.97
AMR/090-D	10/15/1998	34.56	60.70	70.30	9.60	-26.14	-35.74	-28.54
AMR/090-D	4/21/1999	34.56	60.00	69.80	9.80	-25.44	-35.24	-27.89
AMR/090-D	8/23/1999	34.56	60.10	69.50	9.40	-25.54	-34.94	-27.89
AMR/090-D	8/23/1999	34.56	60.10	70.05	9.95	-25.54	-35.49	-28.03
AMR/090-D	10/12/1999	34.56	60.25	69.90	9.65	-25.69	-35.34	-28.10
AMR/090-D	11/23/1999	34.56	60.90	66.40	5.50	-26.34	-31.84	-27.72
AMR/090-D	12/16/1999	34.56	60.75	70.35	9.60	-26.19	-35.79	-28.59
AMR/090-D	12/16/1999	34.56	61.68	68.65	6.97	-27.12	-34.09	-28.86
AMR/090-D	1/13/2000	34.56	60.67	70.95	10.28	-26.11	-36.39	-28.68
AMR/090-D	2/29/2000	34.56	60.20	70.90	10.70	-25.64	-36.34	-28.32
AMR/090-D	3/7/2000	34.56	60.50	71.10	10.60	-25.94	-36.54	-28.59
AMR/090-D	3/16/2000	34.56	59.80	71.20	11.40	-25.24	-36.64	-28.09
AMR/090-D	4/14/2000	34.56	60.50	71.85	11.35	-25.94	-37.29	-28.78
AMR/090-D	4/21/2000	34.56	60.25	71.95	11.70	-25.69	-37.39	-28.62

Table A-1
Groundwater Gauging Data
May 1988 through October 2010
BP Carson Refinery

Well ID	Date Measured	Reference Elevation (feet msl)	Depth to Oil (feet)	Depth to Water (feet)	Measured Oil Thickness (feet)	Oil Elevation (feet msl)	Water Elevation (feet msl)	Poten-tiometric Surface Elevation (feet msl)
AMR/090-D	5/12/2000	34.56	60.30	71.50	11.20	-25.74	-36.94	-28.54
AMR/090-D	5/26/2000	34.56	60.00	71.30	11.30	-25.44	-36.74	-28.27
AMR/090-D	6/2/2000	34.56	59.15	71.70	12.55	-24.59	-37.14	-27.73
AMR/090-D	6/16/2000	34.56	58.70	71.60	12.90	-24.14	-37.04	-27.37
AMR/090-D	9/25/2000	34.56	59.00	71.00	12.00	-24.44	-36.44	-27.44
AMR/090-D	10/23/2000	34.56	58.80	70.70	11.90	-24.24	-36.14	-27.22
AMR/090-D	4/26/2001	34.56	59.30	68.30	9.00	-24.74	-33.74	-26.99
AMR/090-D	10/5/2001	34.56	59.79	64.98	5.19	-25.23	-30.42	-26.53
AMR/090-D	3/26/2002	34.56	55.48	68.49	13.01	-20.92	-33.93	-24.17
AMR/090-D	10/2/2002	34.56	56.04	68.40	12.36	-21.48	-33.84	-24.57
AMR/090-D	3/28/2003	34.56	55.47	68.97	13.50	-20.91	-34.41	-24.29
AMR/090-D	9/25/2003	34.56	55.30	68.60	13.30	-20.74	-34.04	-24.07
AMR/090-D	4/5/2004	34.56	54.12	68.50	14.38	-19.56	-33.94	-23.16
AMR/090-D	9/28/2004	34.56	53.28	69.04	15.76	-18.72	-34.48	-22.66
AMR/090-D	12/14/2004	34.56	50.80	61.70	10.90	-16.24	-27.14	-18.97
AMR/090-D	3/30/2005	34.56	50.77	66.32	15.55	-16.21	-31.76	-20.10
AMR/090-D	9/14/2005	34.56	50.51	57.16	6.65	-15.95	-22.60	-17.61
AMR/090-D	4/5/2006	34.56	48.79	56.10	7.31	-14.23	-21.54	-16.06
AMR/090-D	9/26/2006	34.56	48.12	55.97	7.85	-13.56	-21.41	-15.52
AMR/090-D	11/8/2006	34.56	47.60	55.22	7.62	-13.04	-20.66	-14.95
AMR/090-D	1/26/2007	34.56	46.48	54.05	7.57	-11.92	-19.49	-13.81
AMR/090-D	4/6/2007	34.56	46.00	56.10	10.10	-11.44	-21.54	-13.97
AMR/090-D	7/2/2007	34.56	46.11	56.17	10.06	-11.55	-21.61	-14.07
AMR/090-D	10/12/2007	34.56	47.05	57.75	10.70	-12.49	-23.19	-15.17
AMR/090-D	7/2/2008	34.56	45.65	51.94	6.29	-11.09	-17.38	-12.66
AMR/090-D	10/15/2008	34.56	45.36	51.82	6.46	-10.80	-17.26	-12.42
AMR/090-D	4/2/2009	34.56	45.32	51.90	6.58	-10.76	-17.34	-12.41
AMR/090-D	10/9/2009	34.56		47.27	0.00		-12.71	-12.71
AMR/090-D	10/8/2010	34.56	47.35	47.84	0.49	-12.79	-13.28	-12.91
AMR/198-D	10/05/01	33.03	57.35	71.88	14.53	-24.32	-38.85	-26.79
AMR/198-D	03/26/02	33.03	53.55	70.01	16.46	-20.52	-36.98	-23.32
AMR/198-D	10/02/02	33.03	53.75	69.70	15.95	-20.72	-36.67	-23.43
AMR/198-D	03/27/03	33.03	53.00	69.50	16.50	-19.97	-36.47	-22.78
AMR/198-D	09/25/03	33.03	54.42	67.79	13.37	-21.39	-34.76	-23.66
AMR/198-D	03/18/04	33.03	52.96	68.68	15.72	-19.93	-35.65	-22.60
AMR/198-D	09/28/04	33.03	51.63	68.29	16.66	-18.60	-35.26	-21.43
AMR/198-D	01/31/05	33.03	48.50	66.59	18.09	-15.47	-33.56	-18.55
AMR/198-D	02/10/05	33.03	48.56	65.57	17.01	-15.53	-32.54	-18.42
AMR/198-D	03/08/05	33.03	49.61	62.87	13.26	-16.58	-29.84	-18.83

Table A-1
Groundwater Gauging Data
May 1988 through October 2010
BP Carson Refinery

Well ID	Date Measured	Reference Elevation (feet msl)	Depth to Oil (feet)	Depth to Water (feet)	Measured Oil Thickness (feet)	Oil Elevation (feet msl)	Water Elevation (feet msl)	Poten-tiometric Surface Elevation (feet msl)
AMR/198-D	03/30/05	33.03	51.62	60.12	8.50	-18.59	-27.09	-20.04
AMR/198-D	09/14/05	33.03	48.93	58.24	9.31	-15.90	-25.21	-17.48
AMR/198-D	03/22/06	33.03	44.65	62.70	18.05	-11.62	-29.67	-14.69
AMR/198-D	09/23/06	33.03	45.82	59.43	13.61	-12.79	-26.40	-15.10
AMR/198-D	11/09/06	33.03	42.84	63.08	20.24	-9.81	-30.05	-13.25
AMR/198-D	01/26/07	33.03	42.04	60.25	18.21	-9.01	-27.22	-12.11
AMR/198-D	04/06/07	33.03	42.45	62.75	20.30	-9.42	-29.72	-12.87
AMR/198-D	07/03/07	33.03	41.92	65.50	23.58	-8.89	-32.47	-12.90
AMR/198-D	10/02/07	33.03	46.49	59.70	13.21	-13.46	-26.67	-15.71
AMR/198-D	04/02/08	33.03	47.30	52.22	4.92	-14.27	-19.19	-15.11
AMR/198-D	07/02/08	33.03	46.10	56.30	10.20	-13.07	-23.27	-14.80
AMR/198-D	10/09/08	33.03	44.63	59.27	14.64	-11.60	-26.24	-14.09
AMR/198-D	03/30/09	33.03	43.89	65.91	22.02	-10.86	-32.88	-14.60
AMR/198-D	10/07/09	33.03	46.94	60.10	13.16	-13.91	-27.07	-16.15
AMR/198-D	04/01/10	33.03	46.84	60.07	13.23	-13.81	-27.04	-16.06
AMR/198-D	10/06/10	33.03	46.06	59.73	13.67	-13.03	-26.70	-15.35
ANP/514-D	11/15/1990	32.13		59.42	0.00		-27.29	-27.29
ANP/514-D	4/15/1991	32.13		59.50	0.00		-27.37	-27.37
ANP/514-D	11/15/1991	32.13		60.35	0.00		-28.22	-28.22
ANP/514-D	4/23/1992	32.13		58.58	0.00		-26.45	-26.45
ANP/514-D	12/30/1992	32.13		58.86	0.00		-26.73	-26.73
ANP/514-D	4/22/1993	32.13		56.76	0.00		-24.63	-24.63
ANP/514-D	11/15/1993	32.13		55.75	0.00		-23.62	-23.62
ANP/514-D	4/15/1994	32.13		54.46	0.00		-22.33	-22.33
ANP/514-D	11/3/1994	32.13		54.83	0.00		-22.70	-22.70
ANP/514-D	4/11/1995	32.13		52.92	0.00		-20.79	-20.79
ANP/514-D	10/27/1995	32.13		55.13	0.00		-23.00	-23.00
ANP/514-D	10/31/1996	32.13		57.42	0.00		-25.29	-25.29
ANP/514-D	4/10/1997	32.13		57.65	0.00		-25.52	-25.52
ANP/514-D	10/22/1997	32.13		58.00	0.00		-25.87	-25.87
ANP/514-D	4/8/1998	32.13		57.65	0.00		-25.52	-25.52
ANP/514-D	10/15/1998	32.13		58.00	0.00		-25.87	-25.87
ANP/514-D	4/19/1999	32.13		57.07	0.00		-24.94	-24.94
ANP/514-D	10/14/1999	32.13		57.35	0.00		-25.22	-25.22
ANP/514-D	4/12/2000	32.13		57.35	0.00		-25.22	-25.22
ANP/514-D	10/24/2000	32.13		57.60	0.00		-25.47	-25.47
ANP/514-D	4/3/2001	32.13		56.20	0.00		-24.07	-24.07
ANP/514-D	10/9/2001	32.13		56.96	0.00		-24.83	-24.83
ANP/514-D	3/27/2002	32.13		54.85	0.00		-22.72	-22.72

Table A-1
Groundwater Gauging Data
May 1988 through October 2010
BP Carson Refinery

Well ID	Date Measured	Reference Elevation (feet msl)	Depth to Oil (feet)	Depth to Water (feet)	Measured Oil Thickness (feet)	Oil Elevation (feet msl)	Water Elevation (feet msl)	Poten-tiometric Surface Elevation (feet msl)
ANP/514-D	10/1/2002	32.13		54.74	0.00		-22.61	-22.61
ANP/514-D	3/26/2003	32.13		54.38	0.00		-22.25	-22.25
ANP/514-D	10/1/2003	32.13		53.97	0.00		-21.84	-21.84
ANP/514-D	4/6/2004	32.13		53.42	0.00		-21.29	-21.29
ANP/514-D	10/1/2004	32.13		52.73	0.00		-20.60	-20.60
ANP/514-D	3/30/2005	32.13		50.15	0.00		-18.02	-18.02
ANP/514-D	9/19/2005	32.13		47.55	0.00		-15.42	-15.42
ANP/514-D	3/23/2006	32.13		45.96	0.00		-13.83	-13.83
ANP/514-D	9/27/2006	32.13		43.76	0.00		-11.63	-11.63
ANP/514-D	11/20/2006	32.13		42.75	0.00		-10.62	-10.62
ANP/514-D	1/26/2007	32.13		40.90	0.00		-8.77	-8.77
ANP/514-D	4/16/2007	32.13		39.60	0.00		-7.47	-7.47
ANP/514-D	7/3/2007	32.13		38.29	0.00		-6.16	-6.16
ANP/514-D	10/4/2007	32.13		39.78	0.00		-7.65	-7.65
ANP/514-D	4/9/2008	32.13		39.63	0.00		-7.50	-7.50
ANP/514-D	7/2/2008	32.13		42.36	0.00		-10.23	-10.23
ANP/514-D	10/15/2008	32.13		42.82	0.00		-10.69	-10.69
ANP/514-D	4/1/2009	32.13		43.98	0.00		-11.85	-11.85
ANP/514-D	10/12/2009	32.13		45.03	0.00		-12.90	-12.90
ANP/514-D	4/12/2010	32.13		44.72	0.00		-12.59	-12.59
AMR/515-D	4/15/1991	33.92		60.04	0.00		-26.12	-26.12
AMR/515-D	11/15/1991	33.92		60.64	0.00		-26.72	-26.72
AMR/515-D	4/23/1992	33.92	59.25	59.28	0.03	-25.33	-25.36	-25.34
AMR/515-D	12/30/1992	33.92	58.80	58.84	0.04	-24.88	-24.92	-24.89
AMR/515-D	4/23/1993	33.92	57.73	58.48	0.75	-23.81	-24.56	-23.98
AMR/515-D	11/15/1993	33.92	54.57	63.02	8.45	-20.65	-29.10	-22.53
AMR/515-D	4/15/1994	33.92	54.59	59.69	5.10	-20.67	-25.77	-21.81
AMR/515-D	10/24/1994	33.92	54.83	59.50	4.67	-20.91	-25.58	-21.95
AMR/515-D	6/27/1995	33.92	53.17	60.88	7.71	-19.25	-26.96	-20.97
AMR/515-D	10/25/1995	33.92	52.58	61.92	9.34	-18.66	-28.00	-20.74
AMR/515-D	4/18/1996	33.92	52.46	62.42	9.96	-18.54	-28.50	-20.76
AMR/515-D	10/10/1996	33.92	53.25	64.67	11.42	-19.33	-30.75	-21.88
AMR/515-D	3/11/1997	33.92	54.20	62.55	8.35	-20.28	-28.63	-22.14
AMR/515-D	4/8/1997	33.92	54.10	64.10	10.00	-20.18	-30.18	-22.41
AMR/515-D	10/27/1997	33.92	54.05	64.44	10.39	-20.13	-30.52	-22.45
AMR/515-D	4/20/1998	33.92	53.70	64.00	10.30	-19.78	-30.08	-22.08
AMR/515-D	10/15/1998	33.92	53.15	66.55	13.40	-19.23	-32.63	-22.22
AMR/515-D	4/21/1999	33.92	53.00	66.10	13.10	-19.08	-32.18	-22.00
AMR/515-D	9/24/1999	33.92	53.25	65.85	12.60	-19.33	-31.93	-22.14

Table A-1
Groundwater Gauging Data
May 1988 through October 2010
BP Carson Refinery

Well ID	Date Measured	Reference Elevation (feet msl)	Depth to Oil (feet)	Depth to Water (feet)	Measured Oil Thickness (feet)	Oil Elevation (feet msl)	Water Elevation (feet msl)	Poten-tiometric Surface Elevation (feet msl)
AMR/515-D	10/12/1999	33.92	53.65	65.15	11.50	-19.73	-31.23	-22.26
AMR/515-D	11/23/1999	33.92	53.95	65.90	11.95	-20.03	-31.98	-22.66
AMR/515-D	11/30/1999	33.92	55.30	61.30	6.00	-21.38	-27.38	-22.70
AMR/515-D	1/11/2000	33.92	54.14	64.45	10.31	-20.22	-30.53	-22.49
AMR/515-D	2/29/2000	33.92	54.70	62.50	7.80	-20.78	-28.58	-22.50
AMR/515-D	3/7/2000	33.92	55.90	61.90	6.00	-21.98	-27.98	-23.30
AMR/515-D	3/16/2000	33.92	56.20	57.30	1.10	-22.28	-23.38	-22.52
AMR/515-D	4/14/2000	33.92	55.11	60.20	5.09	-21.19	-26.28	-22.31
AMR/515-D	4/21/2000	33.92	56.40	57.75	1.35	-22.48	-23.83	-22.77
AMR/515-D	5/12/2000	33.92	56.10	59.70	3.60	-22.18	-25.78	-22.95
AMR/515-D	5/26/2000	33.92	56.00	58.00	2.00	-22.08	-24.08	-22.51
AMR/515-D	6/2/2000	33.92	55.50	58.28	2.78	-21.58	-24.36	-22.17
AMR/515-D	6/16/2000	33.92	55.40	57.20	1.80	-21.48	-23.28	-21.87
AMR/515-D	9/25/2000	33.92	52.50	60.83	8.33	-18.58	-26.91	-20.36
AMR/515-D	10/23/2000	33.92	55.55	56.10	0.55	-21.63	-22.18	-21.75
AMR/515-D	4/26/2001	33.92	54.80	57.20	2.40	-20.88	-23.28	-21.39
AMR/515-D	10/5/2001	33.92	54.58	58.33	3.75	-20.66	-24.41	-21.46
AMR/515-D	4/26/2002	33.92	51.56	63.92	12.36	-17.64	-30.00	-20.29
AMR/515-D	10/2/2002	33.92	57.18	63.32	6.14	-23.26	-29.40	-24.57
AMR/515-D	3/31/2003	33.92	51.27	63.08	11.81	-17.35	-29.16	-19.88
AMR/515-D	9/25/2003	33.92	50.36	63.55	13.19	-16.44	-29.63	-19.26
AMR/515-D	4/5/2004	33.92	50.76	62.78	12.02	-16.84	-28.86	-19.41
AMR/515-D	9/28/2004	33.92	49.49	62.14	12.65	-15.57	-28.22	-18.28
AMR/515-D	3/30/2005	33.92	48.40	59.00	10.60	-14.48	-25.08	-16.75
AMR/515-D	9/21/2005	33.92	46.80	53.04	6.24	-12.88	-19.12	-14.22
AMR/515-D	4/4/2006	33.92	44.92	51.20	6.28	-11.00	-17.28	-12.34
AMR/515-D	9/27/2006	33.92	45.90	48.90	3.00	-11.98	-14.98	-12.62
AMR/515-D	4/9/2007	33.92	44.20	48.67	4.47	-10.28	-14.75	-11.24
AMR/515-D	10/12/2007	33.92	41.80	51.99	10.19	-7.88	-18.07	-10.02
AMR/515-D	4/9/2008	33.92	41.72	51.83	10.11	-7.80	-17.91	-9.92
AMR/515-D	10/15/2008	33.92	42.53	52.75	10.22	-8.61	-18.83	-10.76
AMR/515-D	10/19/2009	33.92	42.29	53.77	11.48	-8.37	-19.85	-10.78
AMR/515-D	10/7/2010	33.92	42.19	53.95	11.76	-8.27	-20.03	-11.65

Source: BP Carson Refinery Environmental Database, 2011.

Notes:
bTOC = below top of casing
msl = mean sea level (NAVD88)

Table A-2
Historical Soil Analytical Results
BP Carson Refinery

				EPA method 8010 or 8020																	8015m	CA DTSC
Location ID	Sample Date	Sample ID	Sample Depth	Benzene	Toluene	Ethylbenzene	Total Xylenes	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Chlorobenzene	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	Chloroform	Phenol	Tetrachloroethene	Total 1,2-Dichloroethenes	Trichloroethene	Vinyl Chloride	Fuel Hydrocarbons	Lead
			(feet bgs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
ABO/24EB2	5/23/1989	SO-24EB2-14	14	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ABO/24EB2	5/23/1989	SO-24EB2-19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ABO/24EB2	5/23/1989	SO-24EB2-29	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2 U
ABO/24EB2	5/23/1989	SO-24EB2-39	39	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ABO/24EB2	5/23/1989	SO-24EB2-54	54	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ABO/24EB3	5/24/1989	SO-24EB3-19	19	< 0.03 U	< 0.03 U	< 0.03 U	< 0.03 U	< 0.03 U	< 0.03 U	< 0.03 U	< 0.03 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ABO/24EB3	5/24/1989	SO-24EB3-34	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2 U
ABO/24EB3	5/24/1989	SO-24EB3-39	39	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ABO/24EB3	5/24/1989	SO-24EB3-44	44	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ABO/24EB3	5/24/1989	SO-24EB3-54	54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ABO/24EB5	5/25/1989	SO-24EB5-19	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ABO/24EB5	5/25/1989	SO-24EB5-39	39	< 1 U	2.7	8.6	29	< 1 U	< 1 U	< 1 U	< 1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2 U
ABO/24EB5	5/25/1989	SO-24EB5-44	44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ABO/24EB5	5/25/1989	SO-24EB5-49	49	< 0.005 U	< 0.005 U	< 0.005 U	0.0083	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ABO/24EB5	5/25/1989	SO-24EB5-54	54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANP/514-D	9/18/1990	SO-MW514-10	10	0.014	0.007	< 0.0005 U	< 0.0005 U	NA	NA	NA	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.5 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 6 U	NA
ANP/514-D	9/18/1990	SO-MW514-30	30	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	NA	NA	NA	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.5 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 6 U	NA
ANP/514-D	9/18/1990	SO-MW514-60	60	0.014	0.009	< 0.0005 U	< 0.0005 U	NA	NA	NA	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	0.3	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 6 U	NA
AMR/515-D	9/20/1990	SO-MW515-10	10	< 0.025 U	< 0.025 U	< 0.025 U	< 0.05 U	NA	NA	NA	< 0.025 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.2 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 5 U	NA
AMR/515-D	9/20/1990	SO-MW515-30	30	< 0.1 U	0.43	1.2	4.5	NA	NA	NA	< 0.1 U	< 0.04 U	< 0.04 U	< 0.04 U	< 0.04 U	< 0.04 U	< 0.2 U	< 0.04 U	< 0.04 U	< 0.04 U	< 0.04 U	4,200	NA
AMR/515-D	9/20/1990	SO-MW515-60	60	34	< 25 U	62	330	NA	NA	NA	< 25 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 0.2 U	< 10 U	< 10 U	< 10 U	< 10 U	8,500	NA

Source: BP Carson Refinery Environmental Database, 2011.

Notes:
< = not detected above detection limit
bgs = below ground surface
mg/kg = milligrams per kilogram
NA = not analyzed
Data Validation Qualifier Definitions:
U = Qualified as non-detect due to blank contamination

Table A-3
Historical Groundwater Analytical Results
BP Carson Refinery

Location ID	Sample Date	Sample ID	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Di-Isopropyl Ether (DIPE) (mg/L)	Ethyl tert-Butyl Ether (ETBE) (mg/L)	Methyl tert-Butyl Ether (MTBE) (mg/L)	tert-Amyl Methyl Ether (TAME) (mg/L)	tert-Butyl Alcohol (TBA) (mg/L)	Total Petroleum Hydrocarbons Gasoline Range (TPH-GRO) (mg/L)
AMR/090-D	08/22/96	AMR-090-D-082296	33	43	2.8	12	NA	NA	< 2.5 U	NA	NA	NA
AMR/090-D	01/29/01	AMR-090-D-012901	33	39	2.8	NA	< 2.5 U	< 2.5 U	0.56 J	< 2.5 U	< 25 U	NA
AMR/198-D	05/31/01	AMR-198-D-053101	72	77	< 40 U	NA	< 100 U	< 100 U	1100	< 100 U	< 1000 U	NA
ANP/514-D	09/20/90	GW-514-09-20-90	0.034	0.06	0.032	0.07	NA	NA	NA	NA	NA	NA
ANP/514-D	07/29/99	ANP-514-D-072799	< 0.1 U	< 0.1 U	< 0.1 U	< 0.3 U	NA	NA	NA	NA	NA	NA
ANP/514-D	02/01/01	ANP-514-D-020101	0.013 J	0.008 J	< 0.1 U	NA	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 2.5 U	NA
ANP/514-D	03/14/07	ANP-514-D-031407	0.040	0.037	0.0024	0.058	< 0.0010	< 0.0010	0.019	0.00037 J	< 0.010	10
AMR/515-D	09/21/90	GW-515-09-21-90	9.5	8	0.9	4.8	NA	NA	NA	NA	NA	NA

Source: BP Carson Refinery Environmental Database, 2011.

Notes:
< = not detected above detection limit
mg/L = milligrams per liter
NA = not analyzed
Data Validation Qualifier Definitions:
J = Estimated result
U = Qualified as non-detect due to blank contamination

Table A-4
Historical LNAPL Analytical Results
BP Carson Refinery

			EPA Method 8015B Modified								EPA Method 8260B				
Location ID	Sample Date	Sample ID	GRO (C4-C12) (mg/kg)	EFH (C8-C24) (mg/kg)	EFH (C13-C22) (mg/kg)	EFH (C23-C32) (mg/kg)	ORO (C25-C40) (mg/kg)	EFH (C33-C40) (mg/kg)	EFH (C8-C40) (mg/kg)	EFH (C13-C40) (mg/kg)	Di-isopropyl ether (mg/kg)	Ethyl tert-Butyl Ether (mg/kg)	Methyl tert-Butyl Ether (mg/kg)	tert-Amyl Methyl Ether (mg/kg)	tert-Butyl Alcohol (mg/kg)
AMR/090-D	6/22/2007	AMR-090-D-C-062207	680,000	NA	26,000	< 7,500	NA	< 7,500	NA	26,000	< 26	< 34	< 32	< 35	< 260
AMR/198-D	7/13/2007	AMR-198-D-C-071307	NA	180,000	NA	NA	< 15,000	NA	190,000	NA	NA	NA	NA	NA	NA

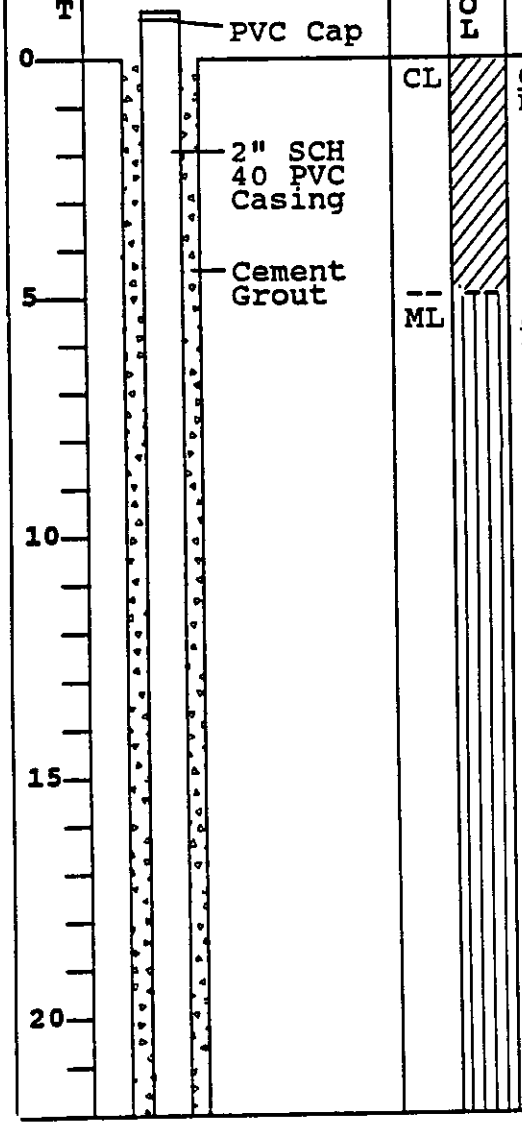
Source: BP Carson Refinery Environmental Database, 2011.

Notes:
< = not detected above detection limit
mg/kg = milligrams per kilogram
NA = not analyzed
EFH = Extractable Fuel Hydrocarbons
GRO = Gasoline Range Organic
ORO = Oil Range Organic

APPENDIX B

LOGS FOR MONITORING WELLS, CPT TESTING, AND ROST™ LIF TESTING

WELL: 90-2	BORING: 90-2	FILE NAME: 902
PROJECT NAME: ARCO WATSON		PROJECT NO. 511-008
LOCATION/COORDINATES: S of Co-Gen Unit by T327		RIG TYPE: Rotary
SCHEDULE	WATER LEVEL	SAMPLING METHOD: GS
INITIATED: 3-25-88	DEPTH: 64.64 (Corrected)	DRILLING CO: Henkle Drilling
COMPLETED: 3-25-88	DATE: 4-12-88	DRILLED BY: V. Bothwell
BACKFILLED: 3-25-88	TIME: NA	LOGGED BY: Bob Felder
CASING ELEVATION: 29.45 '+	GROUND ELEVATION: 27.6 '+	SHEET 1 OF 3
WELL DEPTH: 75'	BORING DEPTH: 80'	



WELL CONSTRUCTION	SOIL TYPE USCS	SOIL TYPE SYMBOL	SOIL DESCRIPTION	SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE TYPE
	CL		CLAY: Dark brown; medium plasticity	1		GS
	--				--	
	ML		SILT: Light brown; and sand; low plasticity	2		GS
					--	
				3		GS
			trace clay interbeds; slight hydrocarbon odor		--	
				4		GS
			no hydrocarbon odor; shells		--	
				5		GS

NA = Not Available

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WELL: 90-2 Cont. BORING: 90-2 Cont. FILE NAME: 902-2

DEPTH IN FEET	WELL CONSTRUCTION	SOIL TYPE USCS	SOIL TYPE SYMBOL	SOIL DESCRIPTION	SAMPLE DATA: SAMPLE NUMBER	SAMPLE DATA: DEPTH	SAMPLE DATA: TYPE
25	2" SCH 40 PVC Casing	ML / SM		SILTY SAND: Light brown; very fine to coarse; fairly well graded; shells; trace clay interbeds	6	--	GS
30	Cement Grout	ML		SANDY SILT: Light brown-tan; little sand; low plasticity; trace clay interbeds	7	--	GS
35					8	--	GS
40	Ben-tonite	--		SILT: Tan; and sand; low plasticity; little clay interbeds	9	--	GS
45	No. 3 Lonestar Sand			trace shells	10	--	GS
50	2" SCH 40 PVC Screen .020" Slot			and blue-gray; silt interbeds; no clay	11	--	GS

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WELL: 90-2 Cont. BORING: 90-2 Cont. FILE NAME: 902-3

DEPTH IN FEET	WELL CONSTRUCTION	SOIL TYPE USCS	SOIL TYPE SYMBOL	SOIL DESCRIPTION	SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE TYPE
55	2" SCH 40 PVC Screen .020" Slot	ML				--	
	No. 3 Lonestar Sand				12		GS
				hydrocarbon odor	13	--	GS
60				little clay	14	--	GS
				no hydrocarbon odor; some clay	15		GS
65					16	--	GS
					17		GS
					18	--	GS
70		-- SM		SILTY SAND: Green; very fine	18A		GS
	2" SCH 40 PVC Casing	-- SP		SAND: Green; very fine; and silt	19	--	GS
				fine to medium			
75	PVC End Cap			blue-green; well graded; trace shell fragments	20	--	GS
				little shell fragments	21		GS
					22	--	GS
80							

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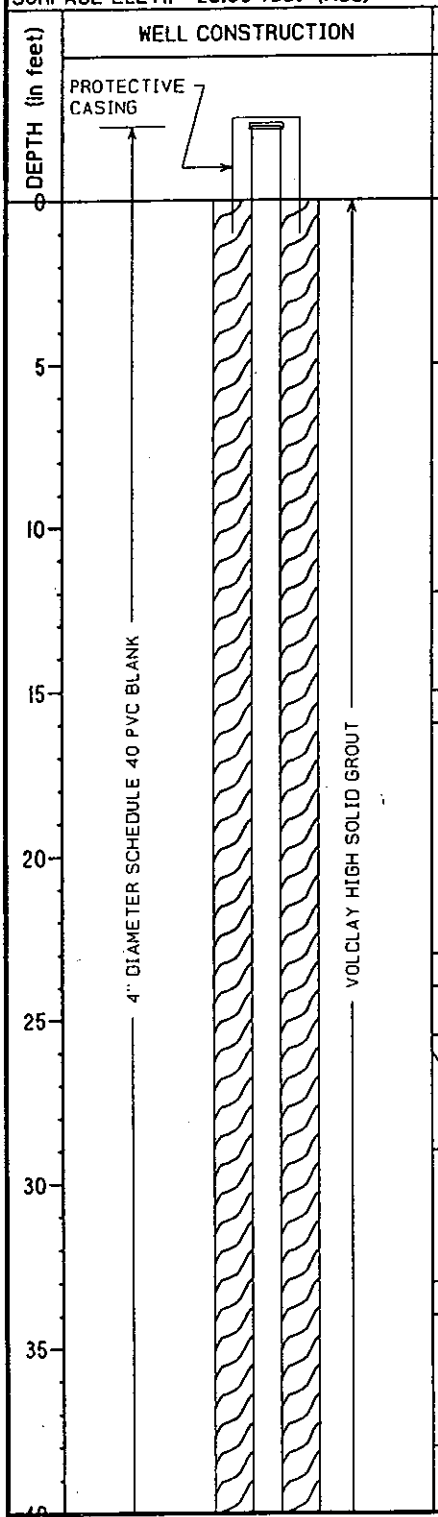
WELL INSTALLATION LOG
Monitoring Well AMR/198-D

PROJECT NO: *ARCLA-15188-500 MTBE Investigation*		CLIENT: *ARCO Carson Refinery*
LOCATION: *Carson, California; North of Tank 90, 8' South of berm*		DRILLING CO.: *Water Development Corp.*
START DATE: *05/29/01* TIME: *14:00*	BORE HOLE ID: *64 mm*	DRILLER: *Jason*
COMPLETION DATE: *05/30/01* TIME: *10:20*	TOTAL DEPTH: *76.0 feet bgs*	RIG TYPE: *CME 1050*
WATER LEVEL DURING DRILLING: *70.0' bgs*	HEIGHT OF CASING: *2.25 feet*	METHOD: *Hollow-stem Auger*
SURFACE ELEV.: *28.30 feet (MSL)*	MP ELEV.: *30.45 feet (MSL)*	LOGGED BY: *M. P. Conkle/S. Felix*



U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	TYPE	DEPTH	BLOWS/6"	% RECOVERY	PID (ppm)
ML		SANDY SILT (FILL); Black; some fine- to coarse-grained sand; stiff; poor plasticity; slightly moist; slight odor.	CC			100	14.8
			CC			100	
SM		SILTY SAND; Very dark gray (5Y 3/1); very fine- to fine-grained; and silt; slightly moist; medium dense; slight sheen; slight odor.					2404
		9.0' – Trace clay.	CC			100	
ML		SILT; Dark olive-gray (5Y 3/2); some clay; very stiff; moderate plasticity; slightly moist; laminated; slight odor.	CC			100	1045
ML		SANDY SILT; Dark gray (5Y 3/1); and fine- to very coarse-grained sand; trace fine gravel; soft; dry; no sheen; slight odor.					41.4
ML		SILT; Dark olive-gray (5Y 3/2); some clay; very stiff; moderate plasticity; slightly moist; slight odor.	CC			70	
SM		SILTY SAND; Olive-gray (5Y 4/2); very fine- to fine-gained; some silt; slightly moist; medium dense; light sheen; strong odor.	CC			50	550
SP							225
ML		SAND; Olive (5Y 4/3); very fine- to medium-grained; trace silt; slightly moist; loose; light sheen; strong odor.					
SP		*25.0'* – And shells; moist; heavy sheen; strong odor.	CC			100	1100
ML		SILT; Olive-gray (5Y 4/2); some clay; trace very fine-grained sand; stiff; moderate plasticity; slightly moist; laminated; strong odor.					428
ML		SAND; Light olive-gray (5Y 6/2); very fine- to medium-grained; some shells; slightly moist; loose; strong odor.	CC			60	55.7
		28.0' – Wet; heavy sheen.					205
SP		SILT; Olive (5Y 4/3), with slight red/brown mottling; trace sand; trace clay; stiff; moderate	CC			70	397

REMARKS: CC - 64 mm Continuous Core
▨ - Sample Interval
■ - Analytical Sample

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WELL INSTALLATION LOG
Monitoring Well AMR/198-D

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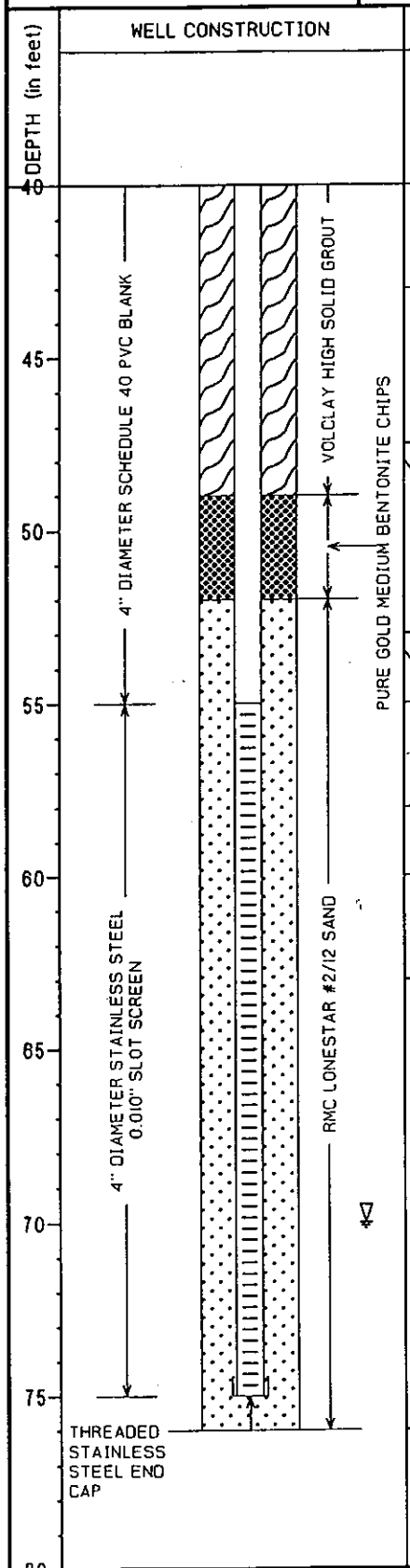

U.S.C.S.	LITHOLOGY	SOIL DESCRIPTION	TYPE	DEPTH	BLOWS/6"	% RECOVERY	PID (ppm)
SP		plasticity; slightly moist; poorly laminated; light sheen; strong odor.					
ML		SILT; Olive-yellow (5Y 6/8); trace fine-grained sand; soft; poor plasticity; slightly moist; slight odor.	CC			80	689
		SILT; Olive (5Y 4/3); trace fine-grained sand; very stiff; poor plasticity; slightly moist; faintly laminated; no sheen; stained; slight odor.					
ML		SAND; Dark gray (5Y 4/1); very fine- to medium-grained, mostly fine-grained; trace silt; slightly moist; loose; faintly laminated; light sheen; hydrocarbon stained; strong odor.					2864
ML			CC			95	25.7
							600
		SANDY SILT; Olive (5Y 4/4); 20% very fine-grained sand; trace clay; soft; poor plasticity; no sheen; trace staining; strong odor.					110
		45.0' - Grades to olive-brown (2.5Y 4/4).	CC			85	125
ML		*47.0'* - Grades to dark gray (5Y 4/1); and sand; light sheen; staining.					
ML							470
SM		SILT; Olive-brown (2.5Y 4/4); trace very fine-grained sand; stiff; poor plasticity; slightly moist; laminated; slight odor.					
		SANDY SILT; Olive-brown (2.5Y 4/3); 30% very fine- to fine-grained sand; slightly moist; medium consistency; slight odor.	CC			80	>10K
ML							4200
		SILT; Olive-brown (2.5Y 4/3); trace very fine- to fine-grained sand; laminated.					
		CLAYEY SILT; Pale olive (5Y 6/3); stiff; no sheen; slight odor.	CC			75	
SP		SILTY SAND; Olive-brown (2.5Y 4/3); slightly moist; stiff; no sheen.					230
		SANDY SILT; Olive-brown (2.5Y 4/3); 30% very fine- to medium-grained sand; moist; loose.					330
		59.0' - Heavy sheen.					
		CLAYEY SILT; Olive-gray (5Y 5/2); 30% clay; stiff; slightly moist; light sheen.	CC			50	400
		SAND; Olive (5Y 5/3); very fine- to fine-grained; trace silt; wet; medium dense; light sheen;strong odor.					
		68.0'-73.0' - Olive (5Y 4/3); light sheen; strong odor.	CC			10	>10K
		73.0'-78.0' - Loose; light sheen; moderate odor.					
		Total depth = 76.0 feet bgs.					

REMARKS: CC - 64 mm Continuous Core
▨ - Sample Interval
■ - Analytical Sample

WELL: 515	BORING: 515	FILE NAME: 515

PROJECT NAME: ARCO LOS ANGELES REFINERY	PROJECT NO. 512-070.43
LOCATION/COORDINATES: West of Cogen Cooling Tower	RIG TYPE: Mobil B-61

SCHEDULE	WATER LEVEL	SAMPLING METHOD: SS
INITIATED: 9-20-90	DEPTH: 63.0'	DRILLING CO: Beylik Drilling Inc.
COMPLETED: 9-20-90	DATE: 9-20-90	DRILLED BY: Fred Carey
BACKFILLED: NA	TIME: 11:00 a.m.	
CASING ELEVATION: 31.34 '*	GROUND ELEVATION: 30.4 '*	LOGGED BY: S. Martin
WELL DEPTH: 79.0'	BORING DEPTH: 82.0'	SHEET 1 OF 3

DEPTH IN FEET	WELL CONSTRUCTION	SOIL TYPE USCS	SOIL TYPE SYMBOL	SOIL DESCRIPTION	SAMPLE NUMBER	DEPTH	TYPE	BLOWS	PID ppm
0	Locking Steel Monument; Slip on Cap	SP		SAND: Reddish brown, medium to fine, some clay, little mica, moist			HA	NA	
5	4" Sch. 40 PVC Blank Casing								
10					515-10	■		52	
15	Cement Grout								
20				greenish grey, fine, little mica, little clay, hydrocarbon odor, dry	515-20			135	

■ Denotes Laboratory Sample

NA = Not Available
HA = Hand Auger

SIMON-EEI Inc.

WELL: 515 Cont. BORING: 515 Cont. FILE NAME: 515-2

DEPTH IN FEET	WELL CONSTRUCTION	SOIL TYPE USCS	SOIL TYPE SYMBOL	SOIL DESCRIPTION	SAMPLE DATA: SAMPLE NUMBER	DEPTH	TYPE	BLOWS	PID ppm
25		SP							
30		ML		SANDY SILT: Greenish grey/black, and sand, fine, little mica (heavy hydrocarbon staining and odor)	515-30			61	
35	Bento-nite Seal								
40	No. 3 Lonestar Sand			hydrocarbon odor and staining, not as heavy as 30' sample	515-40			55	
45	4" Sch. 40 PVC 0.020" Slotted Screen								
50		CL		SILTY CLAY: Greenish grey, some silt, trace, fine sand, little mica, iron staining, laminar	515-50			38	

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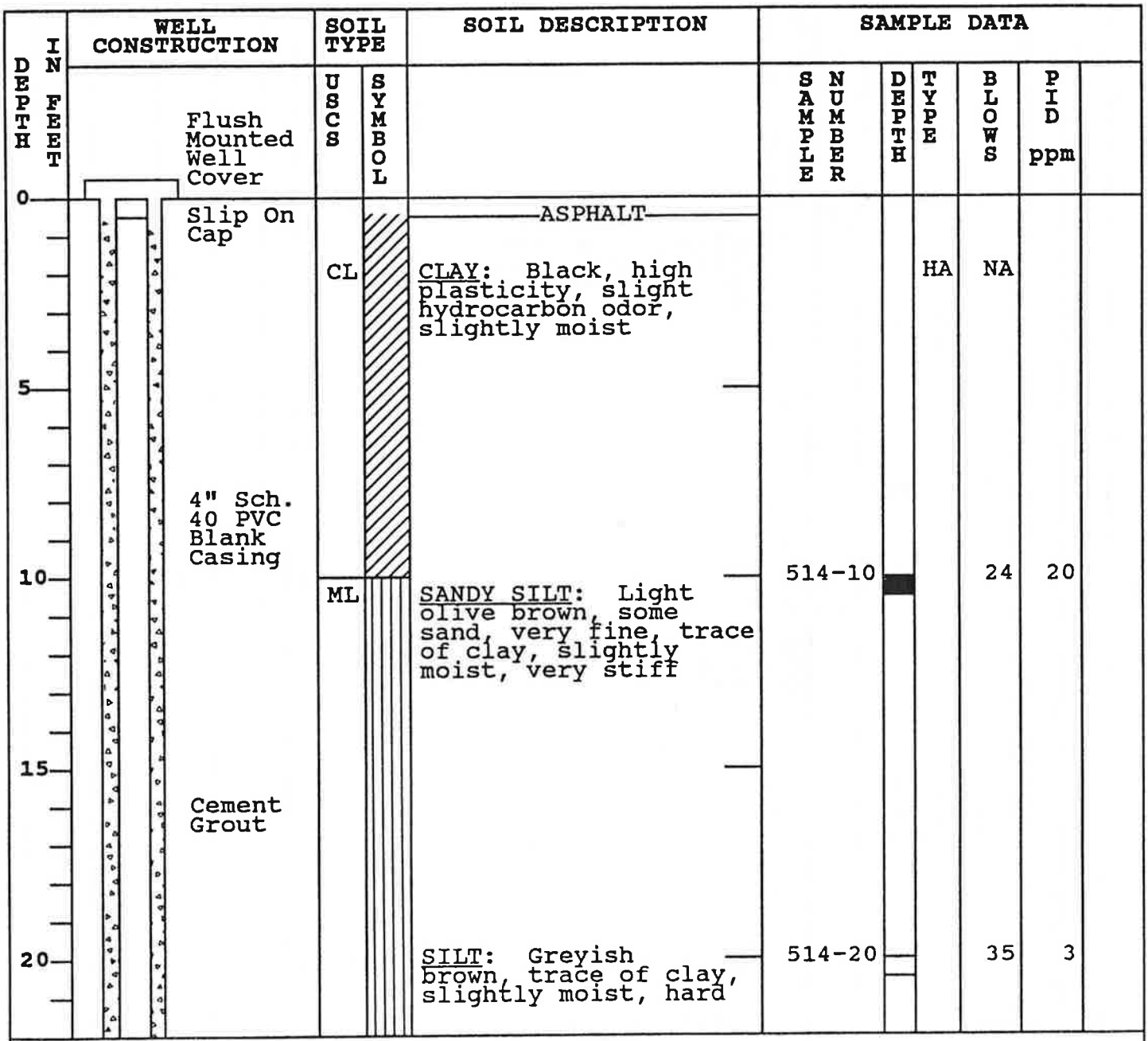
WELL: 515 Cont. BORING: 515 Cont. FILE NAME: 515-3

DEPTH IN FEET	WELL CONSTRUCTION	SOIL TYPE USCS	SOIL TYPE SYMBOL	SOIL DESCRIPTION	SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE TYPE	BLOWS	PID ppm
55									
60				CLAY: Greenish grey, trace silt, iron staining (banded) (or bedded), laminar	515-60			16	
65									
70		SM		SILTY SAND: Greenish grey, fine to medium, little silt, micaceous, wet	515-70			36	
75									
80	Threaded End Cap							17	

SIMON-EEI Inc.

WELL: 514	BORING: B-9	FILE NAME: 514
PROJECT NAME: ARCO LOS ANGELES REFINERY		PROJECT NO. 512-070.43
LOCATION/COORDINATES: W of SW Corner of Shop Bldg		RIG TYPE: Mobile B-61
SCHEDULE	WATER LEVEL	SAMPLING METHOD: SS
INITIATED: 9-18-90	DEPTH: 63.0'	DRILLING CO: Beylik Drilling Inc.
COMPLETED: 9-18-90	DATE: 9-18-90	DRILLED BY: Cesar Diaz
BACKFILLED: NA	TIME: NA	
CASING ELEVATION: 29.54 '*	GROUND ELEVATION: 29.8 '*	LOGGED BY: L. Chaidez
WELL DEPTH: 80.0'	BORING DEPTH: 80.0'	SHEET 1 OF 3



SOIL TYPE USCS	SOIL TYPE SYMBOL	SOIL DESCRIPTION	SAMPLE NUMBER	DEPTH	TYPE	BLOWS	PID ppm
		ASPHALT					
CL		CLAY: Black, high plasticity, slight hydrocarbon odor, slightly moist			HA	NA	
ML		SANDY SILT: Light olive brown, some sand, very fine, trace of clay, slightly moist, very stiff	514-10			24	20
		SILT: Greyish brown, trace of clay, slightly moist, hard	514-20			35	3

■ Denotes Laboratory Sample

NA = Not Available
HA = Hand Auger

SIMON-EEI Inc.

WELL: 514 Cont. BORING: B-9 Cont. FILE NAME: 514-2

DEPTH IN FEET	WELL CONSTRUCTION	SOIL TYPE USCS	SOIL TYPE SYMBOL	SOIL DESCRIPTION	SAMPLE NUMBER	DEPTH	TYPE	BLOWS	PID ppm
25		ML							
30	Bento-nite Seal	SP		SAND: Light olive yellow, very fine, well sorted, trace clay, slightly moist, very dense	514-30			53	50
35	No. 3 Lonestar Sand								
40		CL		SILTY CLAY: Olive and silt, moderate plasticity, trace of sand, slightly moist, hard	514-40			53	50
45	4" Sch. 40 PVC 0.020" Slotted Screen								
50		SP		SAND: Greyish brown, very fine, slightly micaceous, iron stain, lightly moist, dense	514-50			43	20

SIMON-EEI Inc.

WELL: 514 Cont. BORING: B-9 Cont. FILE NAME: 514-3

DEPTH IN FEET	WELL CONSTRUCTION	SOIL TYPE USCS	SOIL TYPE SYMBOL	SOIL DESCRIPTION	SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE TYPE	BLOWS	PID ppm
55		SP		trace of clay, trace of silt	514-55		SS	37	3
60		ML		SANDY SILT: Olive, some sand, very fine, iron stain, moist, hard	514-60		SS	81	20
65				SAND: Olive, fine, slightly micaceous, wet, very dense	514-65		SS	66	2
70					514-70		SS		0
75									
80	Threaded End Cap			medium dense	514-80		SS	28	6

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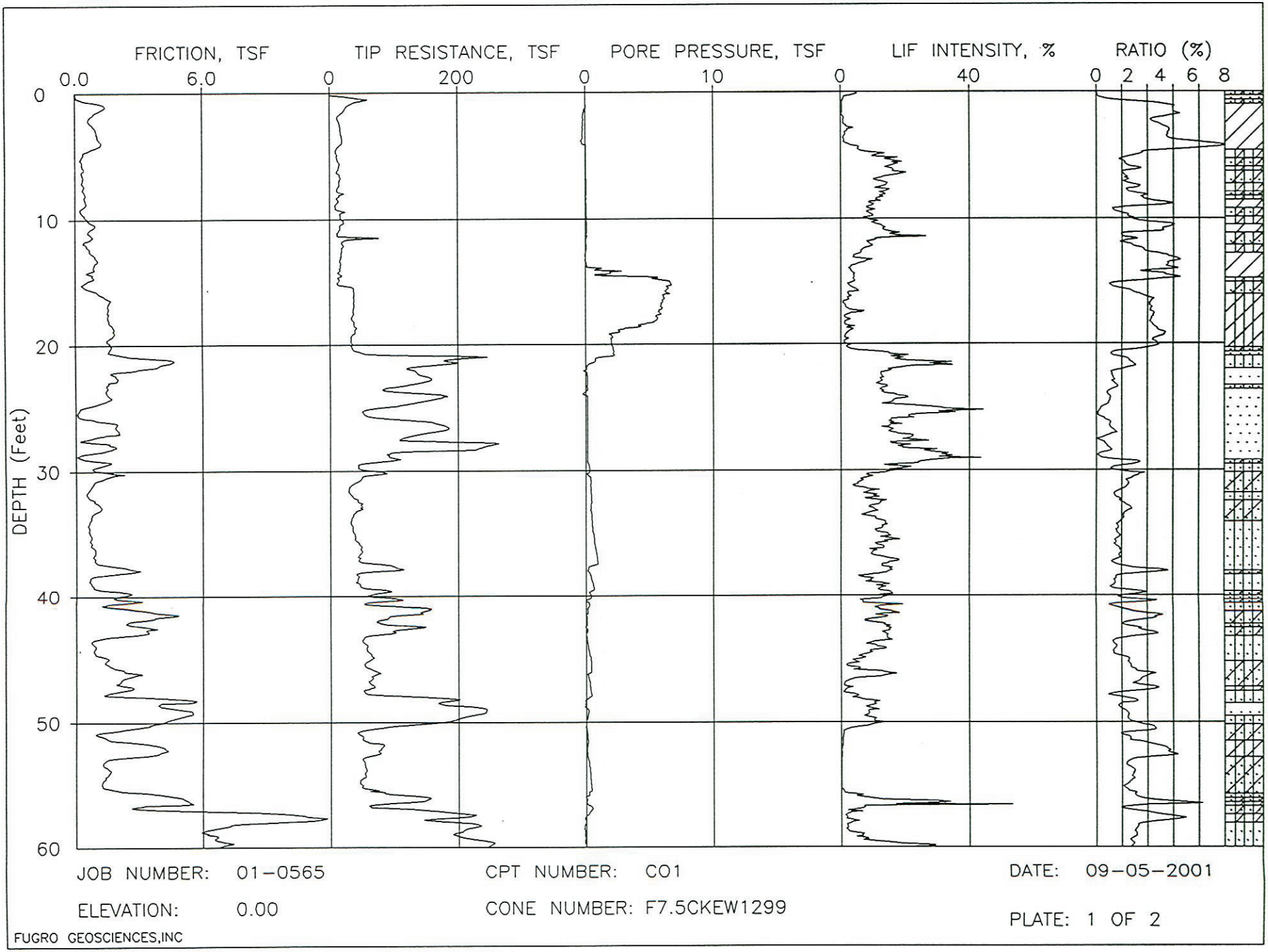


JOB NUMBER: 01-0565

CPT NUMBER: CO1

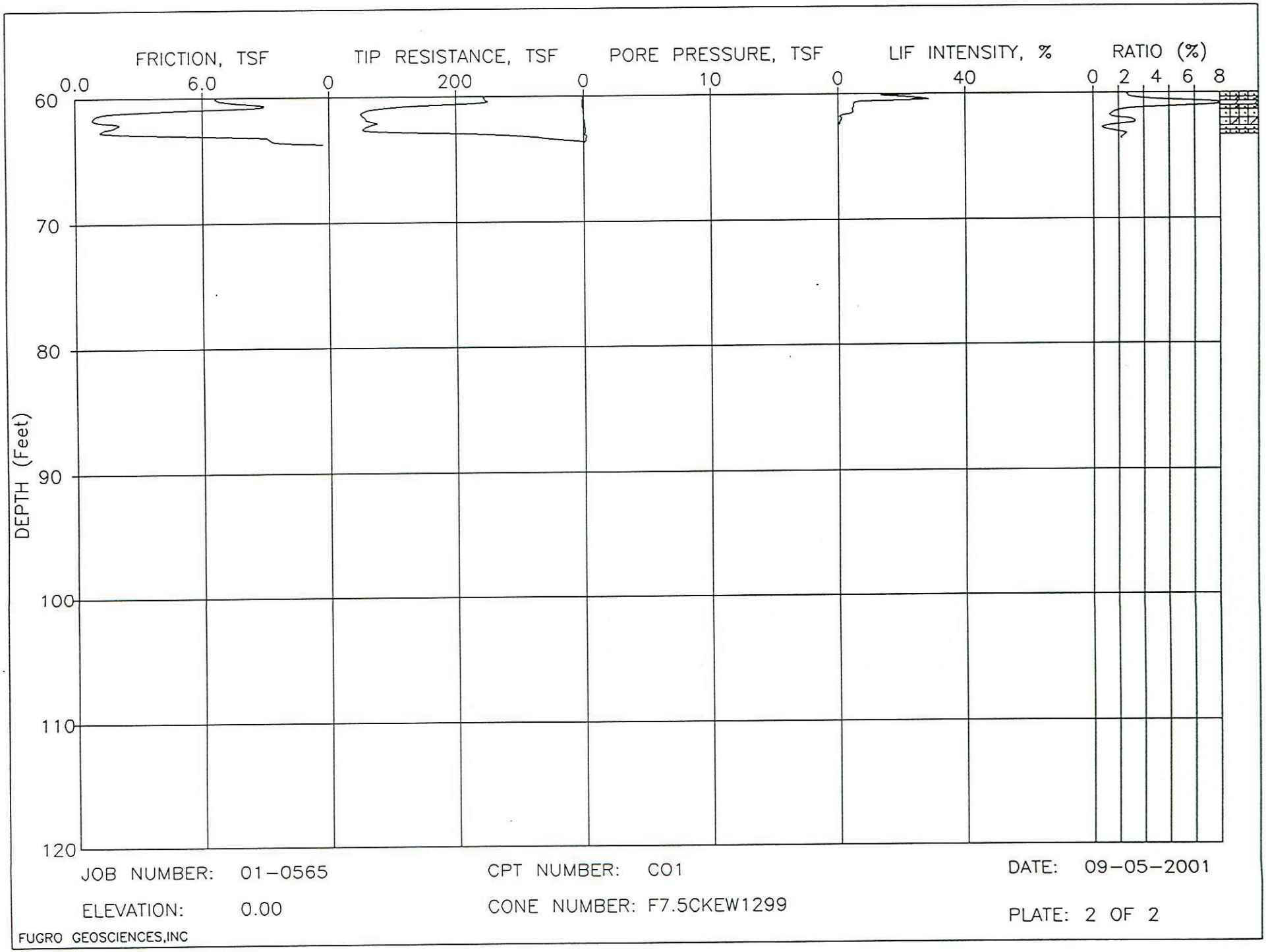
DATE: 09-05-2001

ELEVATION: 0.00

CONE NUMBER: F7.5CKEW1299

PLATE: 1 OF 2

FUGRO GEOSCIENCES,INC



JOB NUMBER: 01-0565

ELEVATION: 0.00

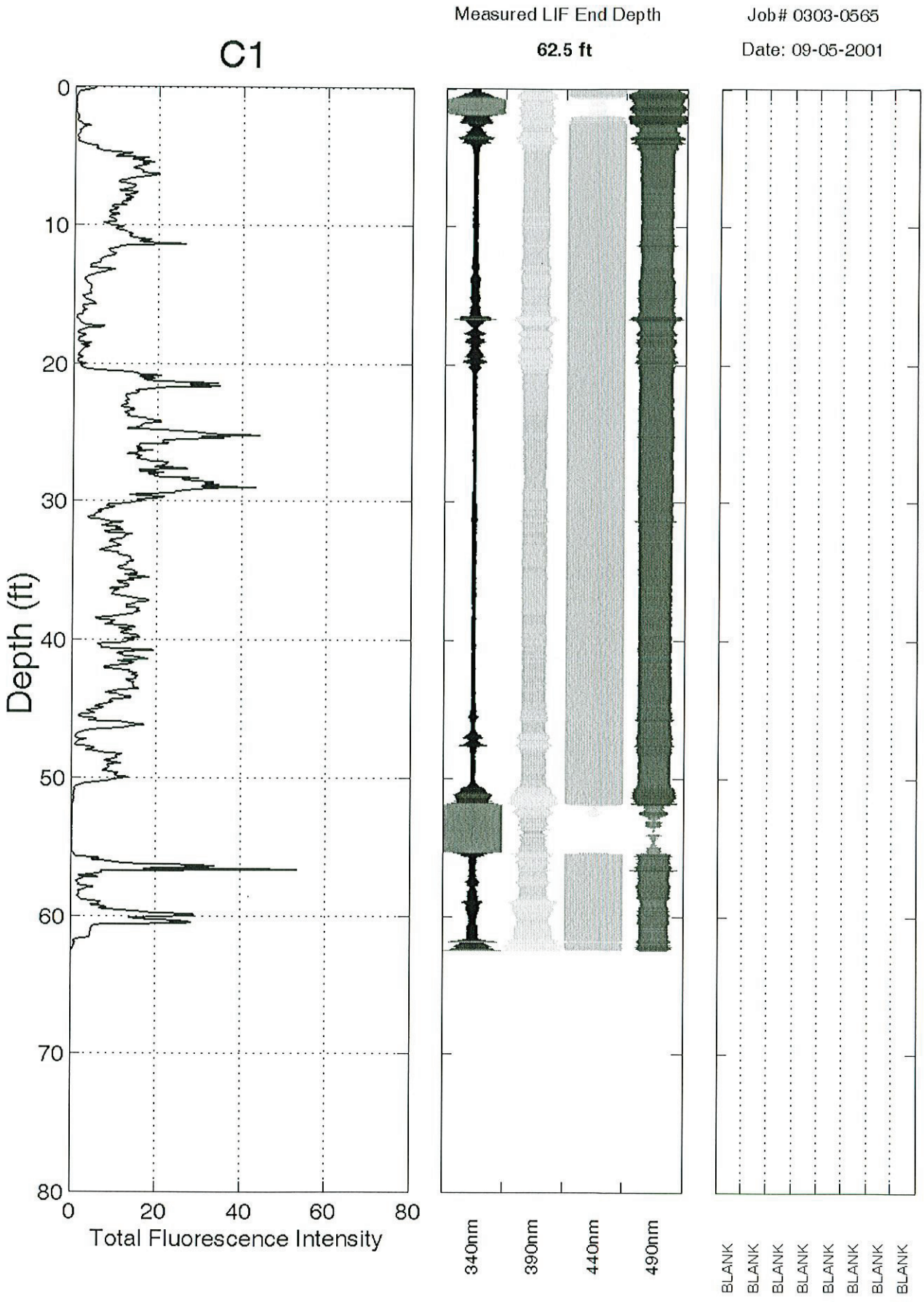
CPT NUMBER: CO1

CONE NUMBER: F7.5CKEW1299

DATE: 09-05-2001

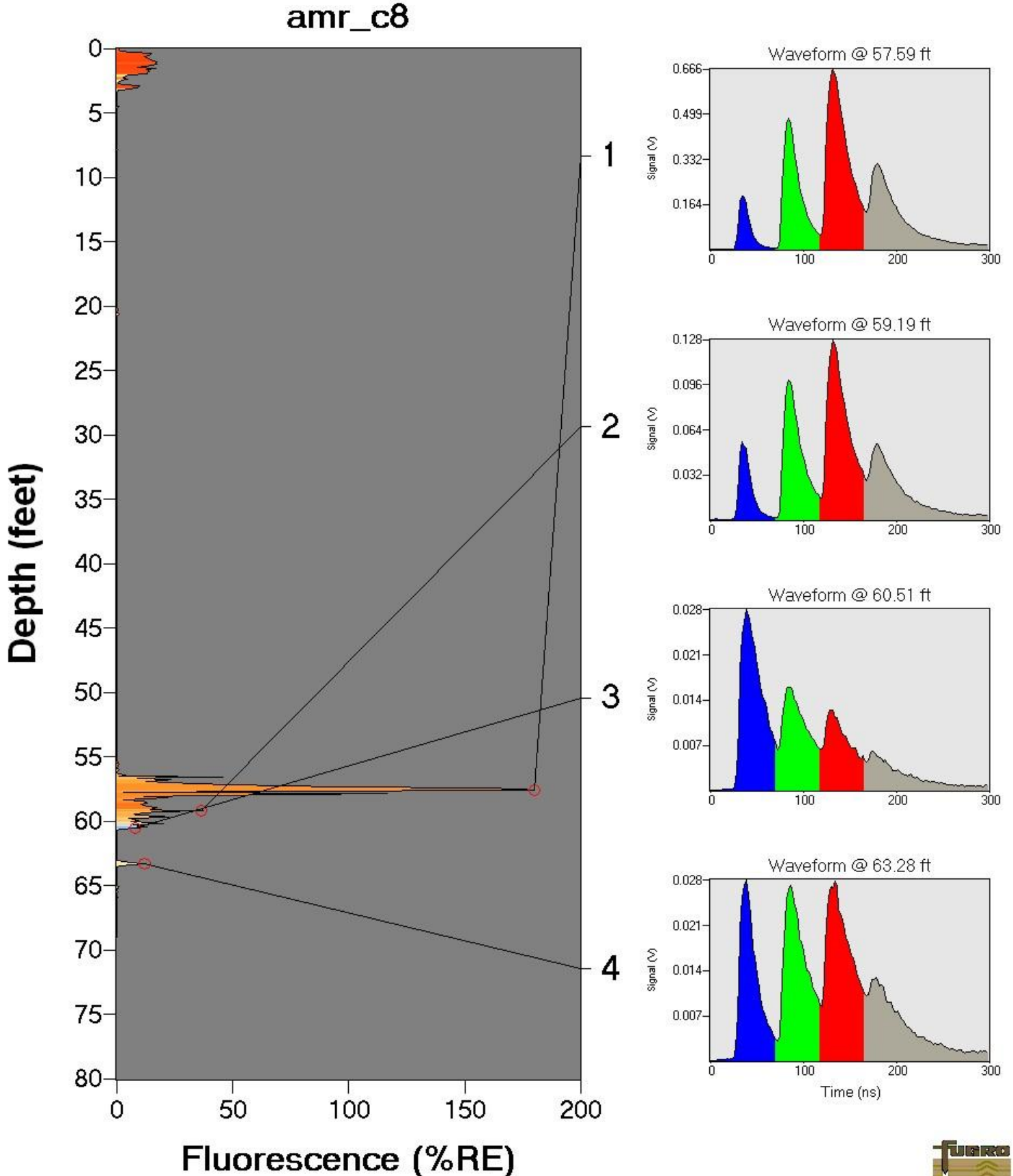
PLATE: 2 OF 2

FUGRO GEOSCIENCES,INC


C1
Measured LIF End Depth
62.5 ft
Job# 0303-0565
Date: 09-05-2001
Depth (ft)
0
10
20
30
40
50
60
70
80
0
20
40
60
80
Total Fluorescence Intensity
340nm
390nm
440nm
490nm
BLANK
BLANK
BLANK
BLANK
BLANK
BLANK
BLANK
BLANK

ROST Fluorescence Response Data

Site: BP Refinery_Carson	Operator: ddeleon
Client: Retec	Fugro Job #: 03-0824
Date/Time: 6/27/2003 @ 2:47:36 PM	Max fluorescence: 179.88% @ 57.59 ft
ROST Unit: 1	Final depth BGS: 69.10 ft



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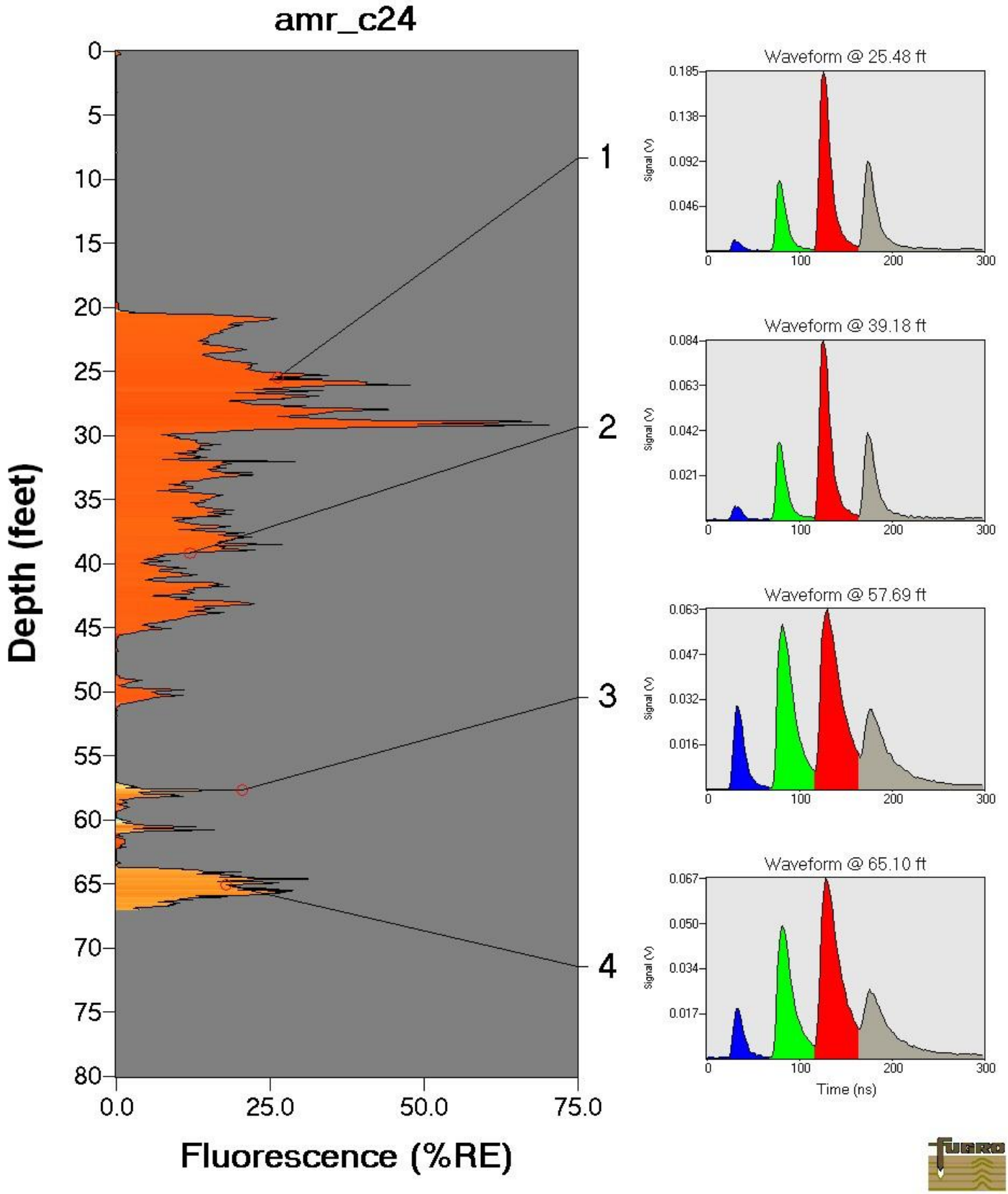
ROST Fluorescence Response Data

Site: BP Refinery_Carson	Operator: ddeleon
Client: Retec	Fugro Job #: 03-0824
Date/Time: 7/3/2003 @ 11:04:31 AM	Max fluorescence: 70.38% @ 29.18 ft
ROST Unit: 1	Final depth BGS: 66.96 ft



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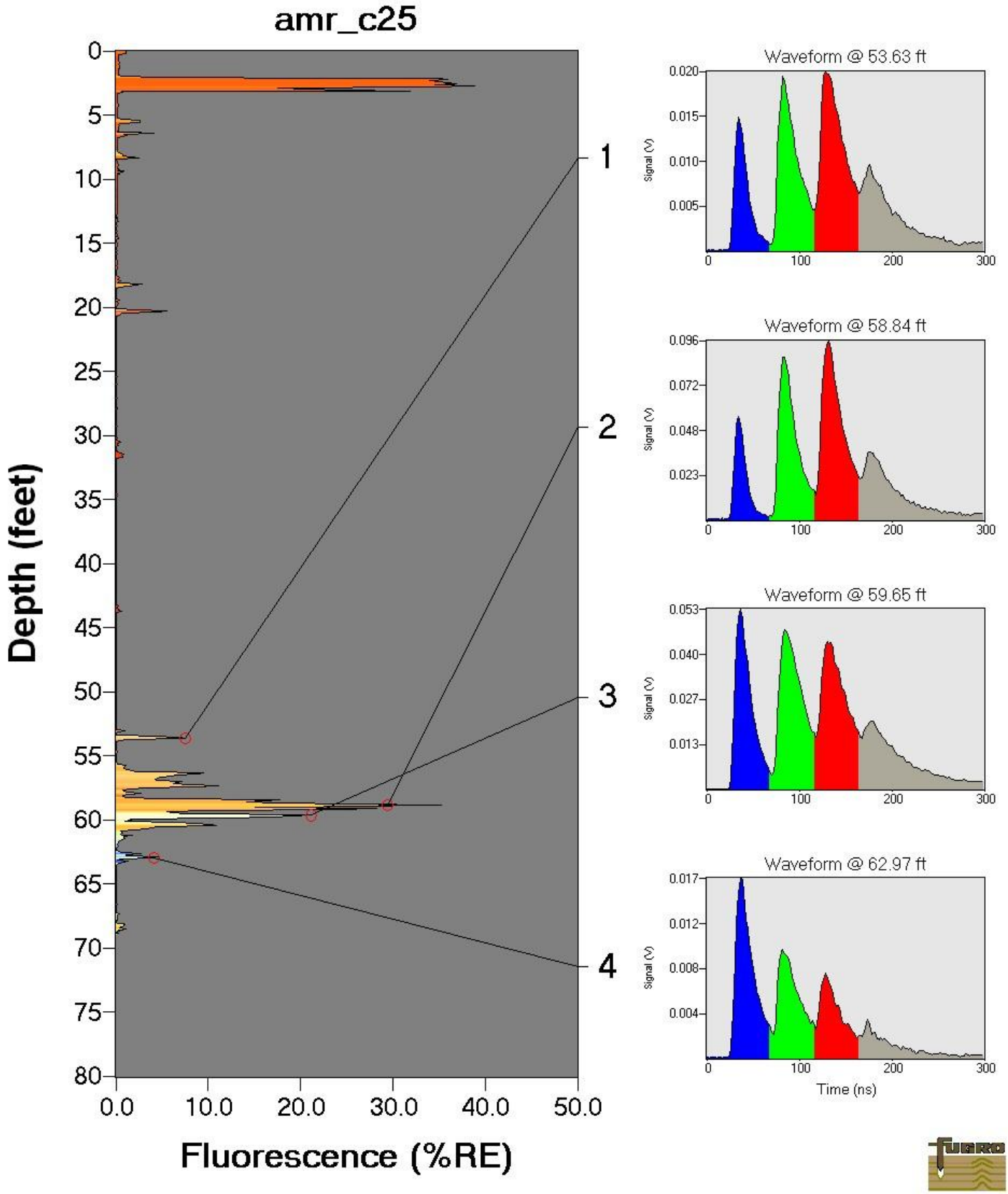
ROST Fluorescence Response Data

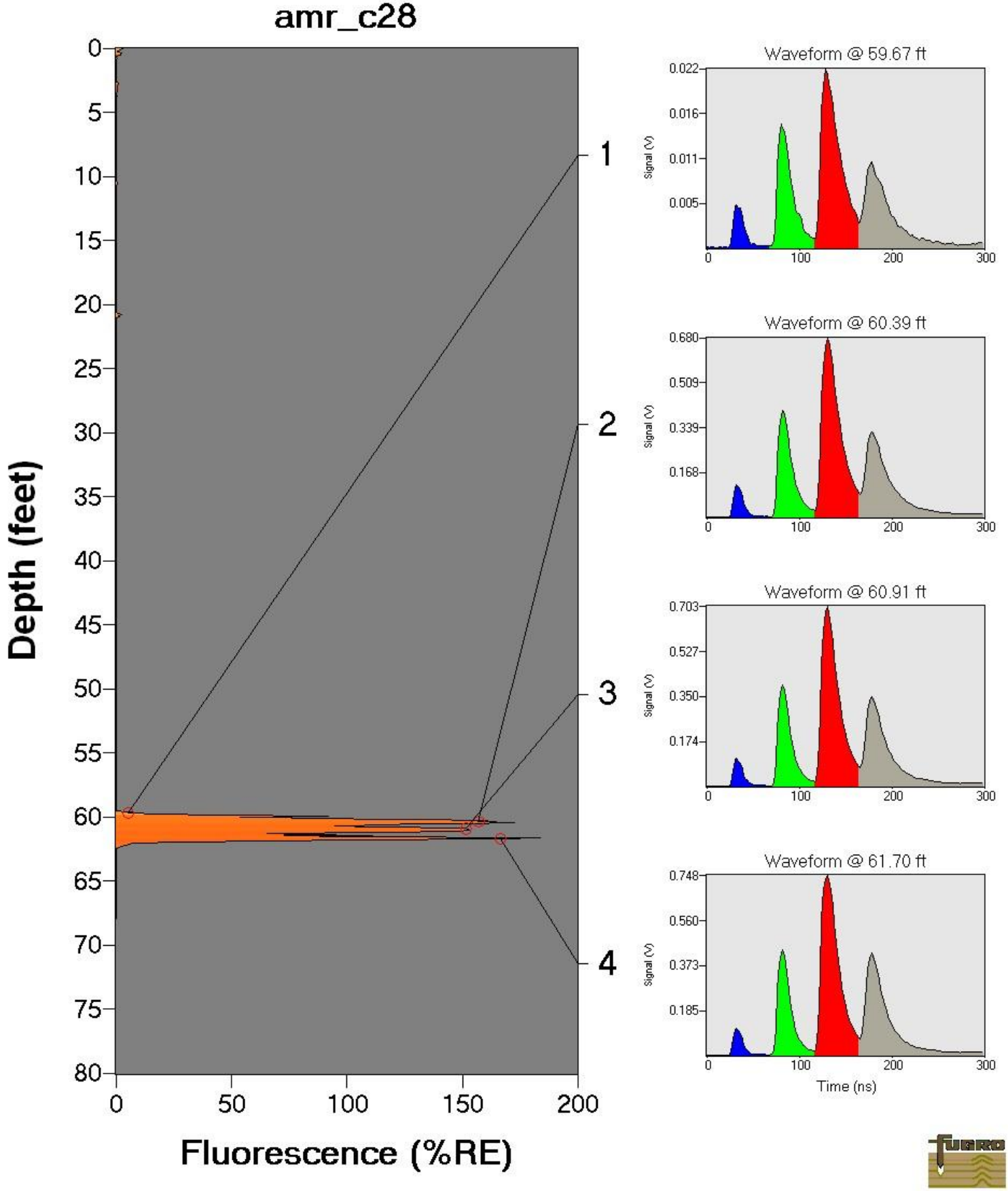
Site: BP Refinery_Carson	Operator: ddeleon
Client: Retec	Fugro Job #: 03-0824
Date/Time: 7/3/2003 @ 3:18:27 PM	Max fluorescence: 38.82% @ 2.73 ft
ROST Unit: 1	Final depth BGS: 68.92 ft



Fugro Geosciences, Inc., 6105 Rookin, Houston, TX 77074 (713) 346-4000 www.geo.fugro.com

ROST Fluorescence Response Data

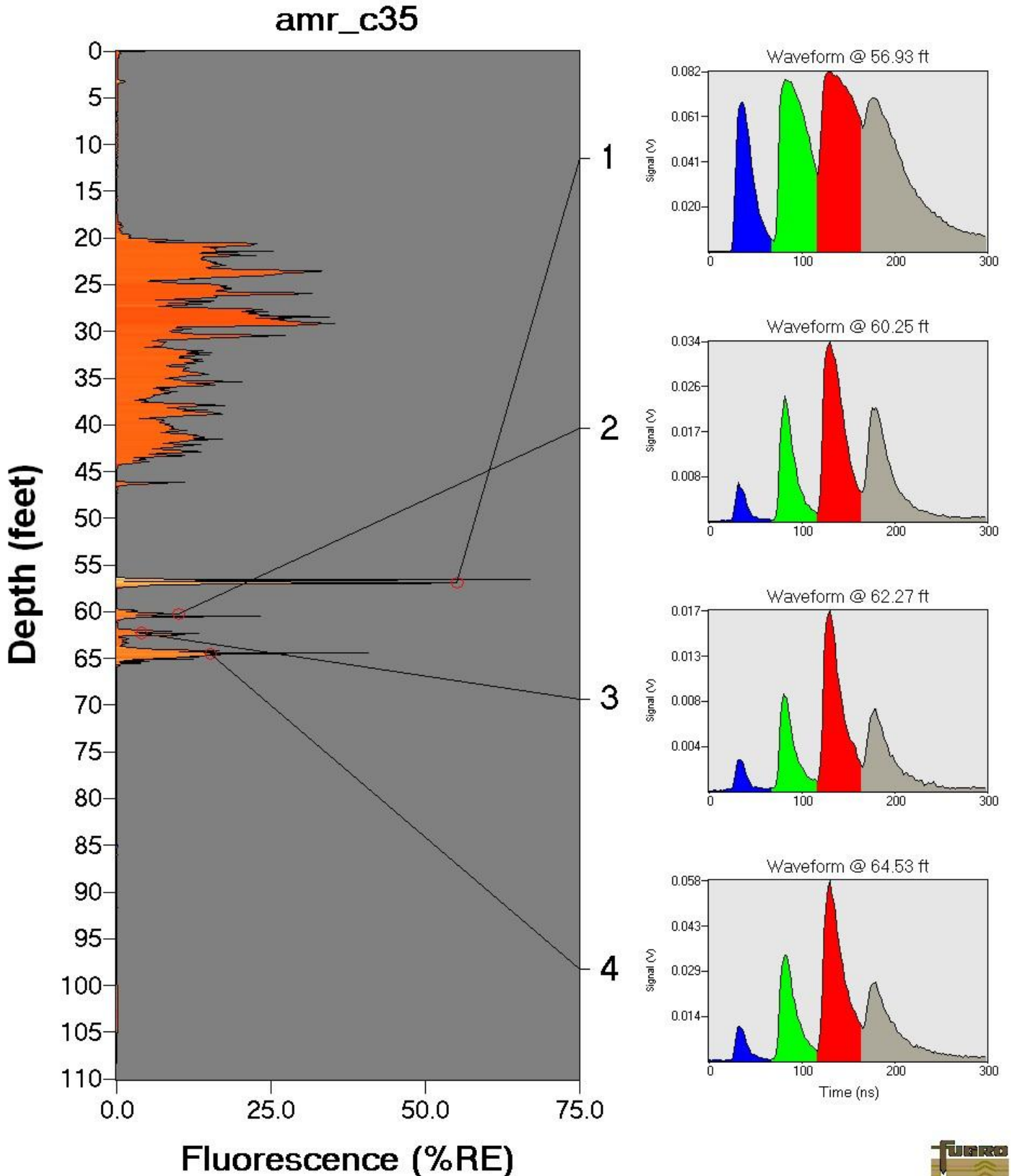
Site: BP Refinery_Carson	Operator: ddeleon
Client: Retec	Fugro Job #: 03-0824
Date/Time: 7/7/2003 @ 2:39:38 PM	Max fluorescence: 183.66% @ 61.60 ft
ROST Unit: 1	Final depth BGS: 68.04 ft



Fugro Geosciences, Inc., 6105 Rookin, Houston, TX 77074 (713) 346-4000 www.geo.fugro.com

ROST Fluorescence Response Data

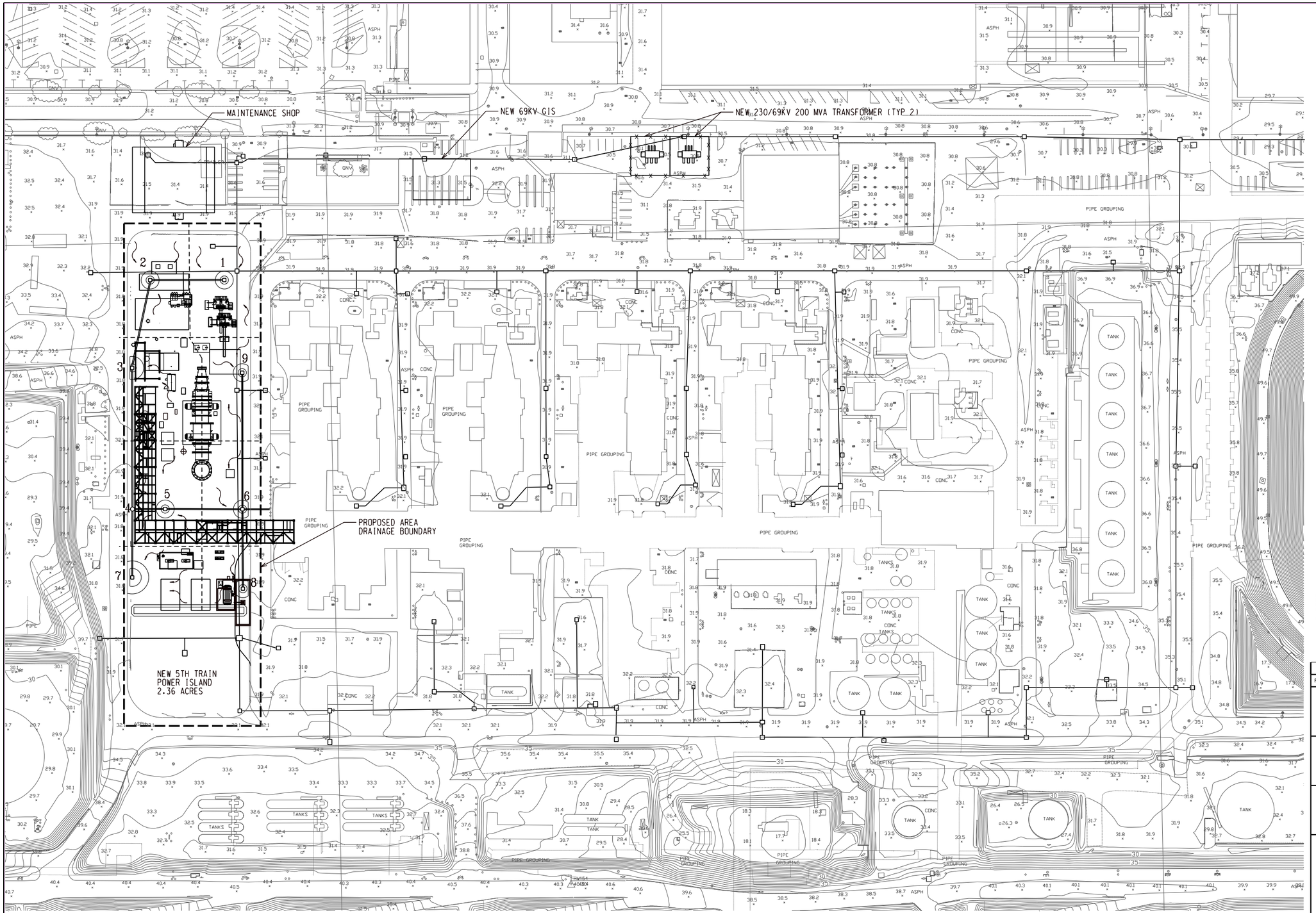
Site: BP Refinery_Carson	Operator: ddeleon
Client: Retec	Fugro Job #: 03-0824
Date/Time: 7/9/2003 @ 2:53:39 PM	Max fluorescence: 66.99% @ 56.60 ft
ROST Unit: 1	Final depth BGS: 108.41 ft



Fugro Geosciences, Inc., 6105 Rookin, Houston, TX 77074 (713) 346-4000 www.geo.fugro.com

APPENDIX C

CONSTRUCTION PLAN FIGURES (FIGURES 4, 5, AND 6 FROM PRELIMINARY DRAFT DRAINAGE, EROSION, AND SEDIMENT CONTROL PLAN)



– PRELIMINARY –
NOT FOR CONSTRUCTION

CONFIDENTIAL

REV.	DESCRIPTION	DWN	CHK	APP	DATE
A	PRELIMINARY	MTW	SJM	SMG	12-22-09

WATSON COGENERATION STEAM AND ELECTRIC RELIABILITY PROJECT

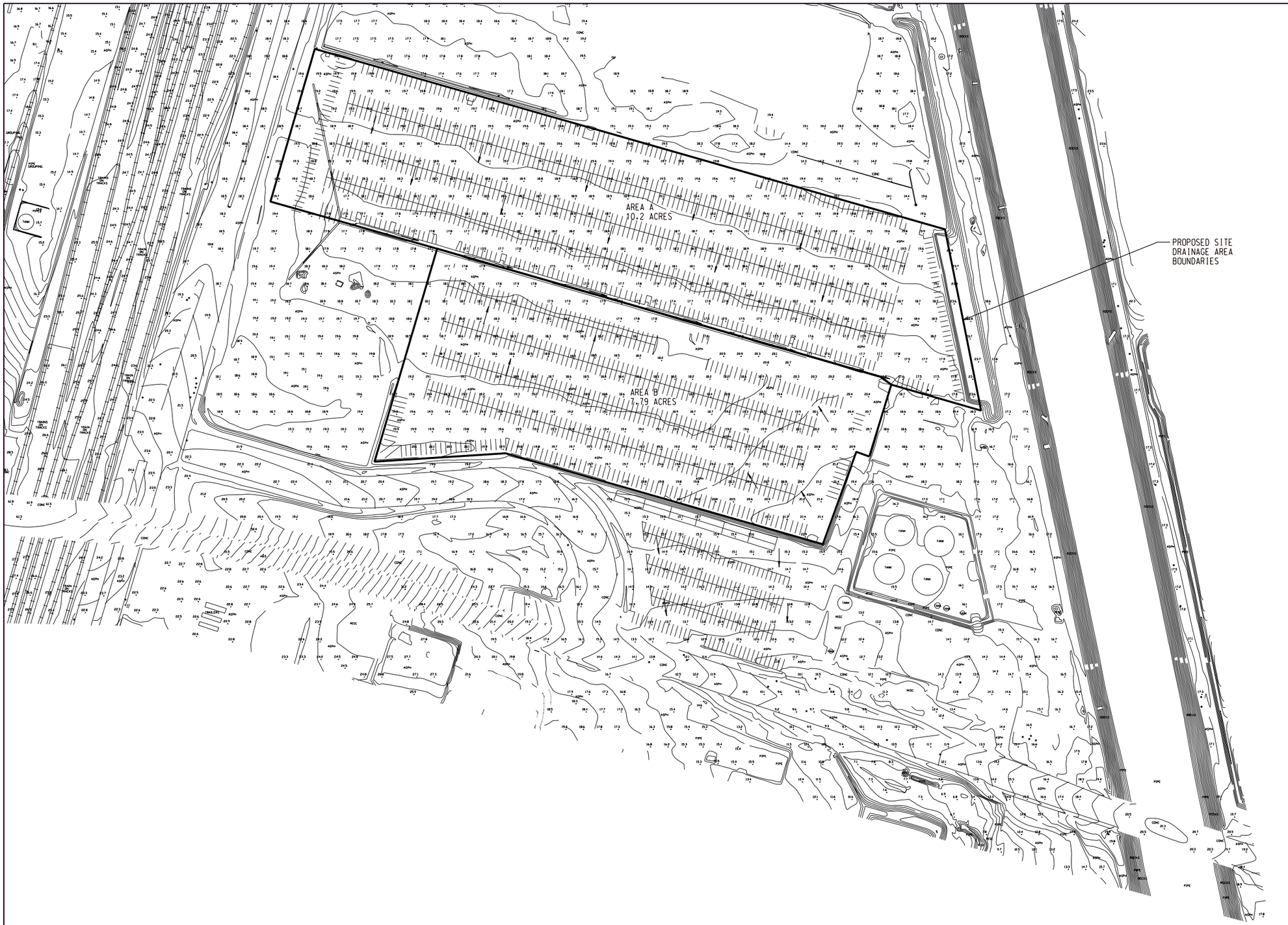
Kiewit
Kiewit Power
9401 Renner Boulevard
Lenexa, Kansas 66219

FIGURE 4 - DRAINAGE MAP - PROJECT SITE

	by	date
DESIGNED	MTW	12-21-09
DRAWN	MTW	12-21-09
CHECKED		
APPROVED		

DRAWING NUMBER

2007-047-CM-204



- PRELIMINARY -
NOT FOR CONSTRUCTION

CONFIDENTIAL

REV	DESCRIPTION	DWN	CHK	APP	DATE
A	PRELIMINARY	MTW	SJM	SMG	12-22-09

WATSON COGENERATION STEAM
AND ELECTRIC RELIABILITY PROJECT

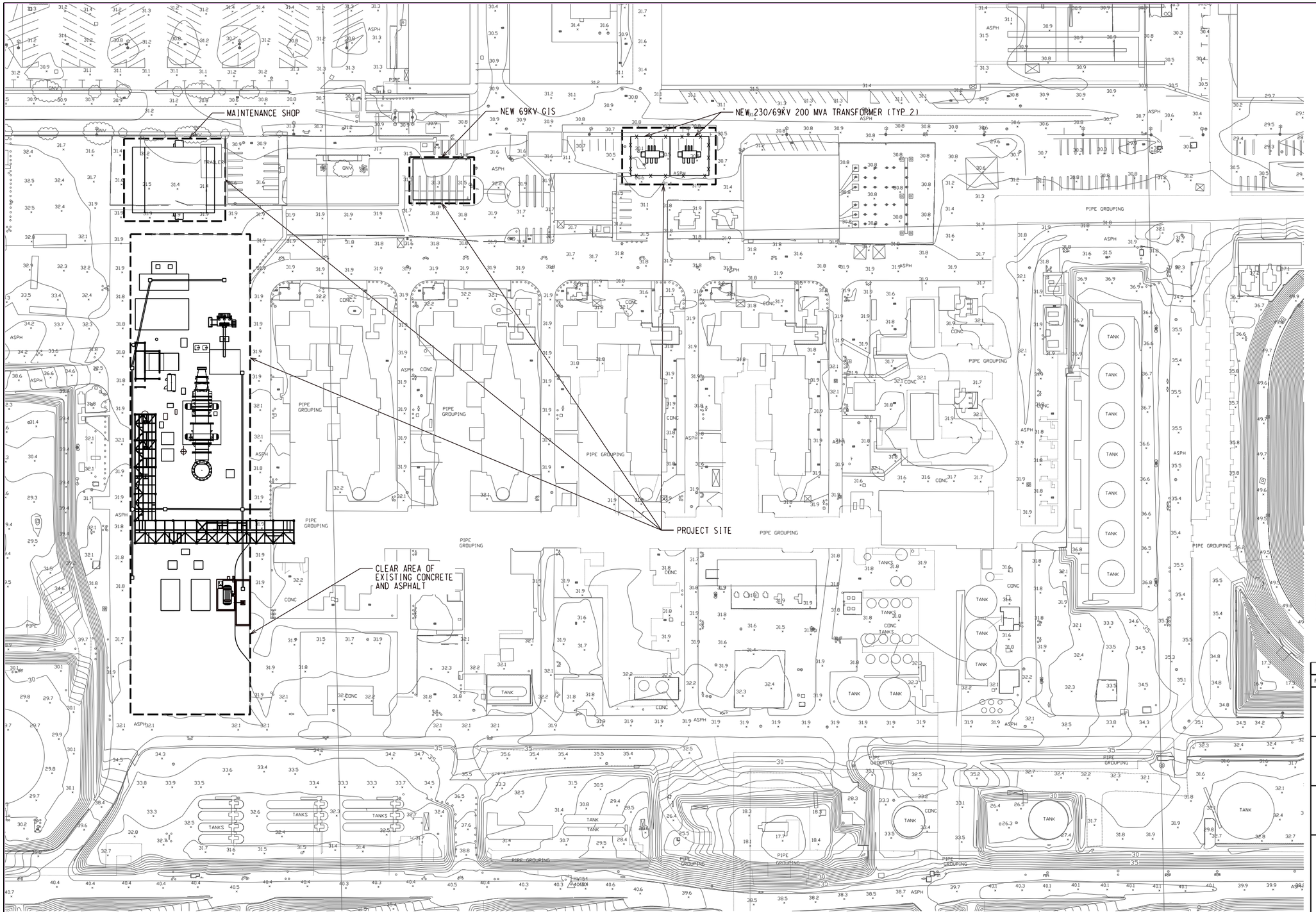
Kiewit
Kiewit Power
9401 Renner Boulevard
Lenexa, Kansas 66219

FIGURE - 5 DRAINAGE MAP- CONSTRUCTION LAYDOWN AND PARKING AREA

	by	date
DESIGNED	MTW	12-21-09
DRAWN	MTW	12-21-09
CHECKED		
APPROVED		

DRAWING NUMBER

2007-047-CM-205



- PRELIMINARY - NOT FOR CONSTRUCTION

CONFIDENTIAL

REV	DESCRIPTION	DWN	CHK	APP	DATE
A	PRELIMINARY	MTW	SJM	SMG	12-22-09

WATSON COGENERATION STEAM AND ELECTRIC RELIABILITY PROJECT

Kiewit
Kiewit Power
9401 Renner Boulevard
Lenexa, Kansas 66219

FIGURE 6 - CLEARING AND GRADING MAP

	by	date
DESIGNED	MTW	12-21-09
DRAWN	MTW	12-21-09
CHECKED		
APPROVED		

DRAWING NUMBER

2007-047-CM-206

APPENDIX D

BP CARSON REFINERY PROCEDURES FOR SOIL MANAGEMENT

APPENDIX D-1

BP CARSON SOILS HANDLING PROCEDURE E107

BP – Carson Business Unit
Policy & Procedure

SOILS HANDLING

Table of Contents

SECTION I - POLICY

DESCRIPTION

Soil handing policy must be integrated into all planned excavations to assure compliance with federal, state and local environmental regulations and to avoid unforeseen costs to the project. Unforeseen costs result from encountering contaminated soil that must be shipped off site for disposal or soil that can not be used as backfill and must also be shipped off site for disposal. The refinery cannot stockpile clean soil unless there is a plan for its use or disposal in the immediate future.

Proper identification, monitoring, handling and disposal of contaminated soil are necessary at the Refinery to prevent an unwanted release of hazardous materials or exposure to Refinery personnel. Air, water and waste regulations and requirements must be considered when excavating soil. These requirements include:

- SCAQMD Rule 1166 for VOC emissions from decontamination of soil, including the Refinery's Rule 1166 VOC Contaminated Soil Mitigation Plan (Various Locations),
- SCAQMD Rule 1150 for excavation of abandoned landfills,
- SCAQMD Rule 403 Fugitive Dust
- NESHAPs for demolition and renovation of regulated asbestos-containing materials (40 CFR 61 Subpart M),
- Site Remediation NESHAPs (40 CFR 63 Subpart GGGGG),
- DTSC and RCRA hazardous waste regulations, including RCRA Subpart CC,
- LARWQCB Cleanup & Abatement Orders, including the Refinery's Soil Remediation Plan
- NPDES General Permit for Storm Water Discharges Associated with Construction Activity and LACDPW storm water management requirements.

Many of the requirements for these regulatory programs overlap. The purpose of this policy and the following procedures is to link them together. All but Rule 1166 are addressed in other policies and procedures, so the focus of the following procedure is the Rule 1166 requirement.

Activities to which this policy and the following procedures apply and the individuals responsible for implementing them include:

- Planned Excavations– Foremen, OVA Specialist, Contractor Rep
- Maintenance – Maintenance Coordinator
- Spill cleanup – Waste yard Supervisor
- Notifications and Reporting – Environmental Field Compliance Coordinator

SCAQMD Rule 1166 rule sets requirements to control the emission of Volatile Organic Compounds (VOC) from excavating, grading, handling and treating VOC-contaminated soil as a result of leakage from storage or transfer operations, accidental spillage, or other deposition.

SCAQMD Rule 403 attempts to reduce the amount of solid, airborne particles by requiring actions to prevent, reduce or control fugitive dust emissions. Fugitive dust sources must be controlled to ensure that dust does not leave the refinery fence line either in the air or on the street, including the Southwest Tank Farm. Requirements for this rule are addressed in Policy & Procedure E208, Fugitive Dust.

SCAQMD Rule 1150 applies to excavation of the abandoned landfill in the northeast property, also known as the Johns Manville property. Requirements for this rule are addressed in Policy & Procedure E211, the Northeast Property Excavation.

40 CFR 61 Subpart M NESHAPs applies to demolition and renovation or regulated asbestos-containing materials, which could be buried anywhere in the northeast area of the Refinery, but most likely in the northeast property, also known as the Johns Manville property. These requirements are addressed in Policy & Procedure E211, Northeast Property Excavation.

40 CFR 63 Subpart GGGGG (Site Remediation) NESHAPS applies to remediation operations performed at the Refinery which involve materials with average total VOHAP concentrations greater than 500 ppm stored in remediation material management units, with capacities greater than 26.4 gallons. These requirements are addressed in Policy & Procedure E302, High VOC Wastes.

RCRA Subpart CC applies to waste with VOC concentrations greater than 500 ppm stored in hazardous waste management units, including containers and surface impoundments, with capacities greater than 26.4 gallons. Subpart CC requirements include containers, labeling, and inspections. More information on Subpart CC requirements can be found in Policy & Procedure E302, High VOC Wastes.

The NPDES General Permit for Storm Water Discharges Associated with Construction Activity applies to construction projects with five or more acres of disturbed soil. The LACDPW storm water management requirements apply to construction projects with two or more acres of disturbed soil or 40,000 or more square feet of impervious area. Construction Storm Water Permit requirements and LACDPW storm water management requirements include erosion control best management practices. More information on storm water pollution prevention for construction projects can be found in Policy & Procedure E907, Construction Stormwater Permit and E402, Construction Stormwater Pollution Prevention.

All excavations must be evaluated before excavation is started. The soil must be visually monitored for VOC contamination as well as any other soil contamination that could occur. Any discovery of contamination must be reported to the Environmental department, as soon as possible.

OBJECTIVE

The Refinery's policy is to comply with the regulations and requirements set forth by the EPA, SCAQMD, DTSC and LARWQCB in regards to handling, monitoring and disposing of contaminated soil and preventing the release of VOCs to the atmosphere.

DEFINITIONS

Contaminated Soil – A soil that contains odors or visible contamination with materials such as acids, caustics, hydrocarbons and other waste characteristics. This includes VOC-contaminated soil.

DTSC – The mission of the Department of Toxic Substances Control is to protect public health and the environment in California from harmful exposure to hazardous substances. The DTSC

is responsible for administering and enforcing the federal and California regulations associated with the RCRA.

Excavation – The process of digging out and removing materials, including any material necessary to that process such as the digging and removal of asphalt or concrete necessary to expose, dig out and remove known VOC contaminated soil

Grading – The process of leveling off to produce a smooth surface including the removal of any material necessary to that process such as asphalt and concrete necessary to expose known VOC-contaminated soil

LARWQCB – The Los Angeles Regional Water Quality Control Board is responsible for enforcing water quality objectives and implementing plans to protect the beneficial uses of waters in the Los Angeles Region.

NESHAPs – National Emission Standards for Hazardous Air Pollutants

NPDES – The National Pollutant Discharge Elimination System is a national permit system governing the discharge of pollutants or other materials into waters of the United States.

OVA – An organic vapor analyzer used for Rule 1166 VOC monitoring using flame ionization, photo ionization or any other method that complies with the specifications of 40 CFR Part 60 Appendix A, EPA Method 21 Section 3.1.1.a. *It must be calibrated using hexane*.

Remediation material – material that contains one or more of the hazardous air pollutants listed in Table 1 of 40 CFR 63 subpart GGGGG. This material may include soils contaminated by spilled material.

RCRA – The Resource Conservation and Recovery Act was passed by the United States Congress to regulate the management of hazardous and non-hazardous waste. The United States Environmental Protection Agency has delegated most RCRA administration and enforcement duties in California to the DTSC.

Site remediation – One or more activities or processes used to remove, destroy, degrade, transform, immobilize, or otherwise manage remediation material. The monitoring or measuring of contamination levels in environmental media using wells or by sampling is not considered to be a site remediation. Activities performed under the authority of Compensation Liability Act (CERCLA) or a Resource Conservation and Recovery Act (RCRA) corrective action at a treatment, storage and disposal facility (TSDF) are also not considered to be site remediation. Refer to the regulation for more exemptions.

SCAQMD – The South Coast Air Quality Management District is the local agency responsible for controlling emissions from stationary sources of air pollution, including emissions from the excavation of hydrocarbon impacted soils. The SCAQMD is required to develop and follow an Air Quality Management Plan that describes how to reduce emissions and bring the air basin into compliance with state and federal ambient air quality standards.

UST – Underground storage tanks used to store hazardous substances are regulated by the California Health and Safety Code. The DPW and the CUPA administer the regulations.

VOC – A volatile organic compound is any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate and exempt compounds.

VOC-contaminated soil –A soil that registers a concentration of 50 ppm or greater Volatile Organic Compounds as measured before suppression materials have been applied and at a distance of no more than three inches from the surface of the excavated soil with an organic vapor analyzer calibrated with hexane.

VOC Contaminated Soil Mitigation Plan – A plan to minimize VOC emissions to the atmosphere during excavation and any subsequent handling of VOC-contaminated soil.

Volatile Organic Materials – include gasoline, diesel, crude oil, lubricant, waste oil, adhesive, paint, stain, solvent, resin, monomer, and/or any other material containing VOC.

VOHAP – A volatile organic hazardous air pollutant, which includes benzene, ethyl benzene, toluene, vinyl chloride, xylenes and other VOCs.

RELEVANT DOCUMENTS

- Rule 1166 Contaminated Soil Various Locations Mitigation Plan
- Rule 1166 Soil Monitoring Records form
- Rules 1149 & 1166 Notification Form
- Rule 1166 Soil Treatment/Disposal Plan
- Cleanup and Abatement Orders
- Soil Remediation Plan
- Construction Storm Water Permit
- Policy & Procedure E208, Fugitive Dust
- Policy & Procedure E211, Northeast Property Excavation
- Policy & Procedure E302, High VOC Wastes
- Policy & Procedure E902, Cleanup & Abatement Order
- Policy & Procedure E907, Construction Stormwater Permit
- Policy & Procedure E911, Industrial Stormwater Pollution Prevention Plan
- Policy & Procedure F/S 1010 Excavation Inspection and Soil Monitoring

SECTION II - PROCEDURE

Activity	Responsibility
SCAQMD Rule 1166 Contaminated Soil Mitigation Plan Submittal for BP	
For annual excavations of less than 2000 cubic yards of VOC contaminated soil, follow the requirements of the Refinery's Various Locations Rule 1166 Contaminated Soil Mitigation Plan. A Various Location Plan is limited to the excavation of 2000 cubic yards or less of VOC contaminated soil in any consecutive 12 month period at the same site. The plan should be renewed annually. The application must be submitted at least 60 days prior to the expiration of the previous years plan. The application should be addressed and submitted to: SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT P.O. BOX 4944 – ATTN: STANDARD PERMITS DIAMOND BAR, CA 91765-0944 The application information and cover letter are located in file: Q:\EHNS\ENV\AQMD\Rule 1166\Applications A copy of the approved plan must be filed in Environmental file 3G01-0019570. If an excavation is expected to generate over 2,000 cubic yards of VOC-contaminated soil a site-specific application for a mitigation plan must be prepared. Excavation activities could be delayed upon reaching 2,000 cubic yards of VOC contaminated soil if the application is not submitted and approved by the AQMD. This could take several weeks.	Environmental Field Compiance Coordinator
SCAQMD Rule 1166 Contaminated Soil Mitigation Plan Submittal for Contractors	
All contractors conducting excavation at the refinery or associated properties or work directed by bp must apply for and maintain a Rule 1166 Various Locations VOC Contaminated Mitigation Plan. This plan must be kept up to date and a copy must be made available upon request. Contractors working in the refinery are not allowed to make notifications or work under the plan held by bp. If an excavation is expected to generate over 2,000 cubic yards of VOC-contaminated soil a site-specific application for a mitigation plan must be prepared. Excavation activities could be delayed upon reaching 2,000 cubic yards of VOC contaminated soil if the application is not submitted and approved by the AQMD. This could take several weeks.	Contractor Site Supervisor
Pre-Excavation Notifications	
Excavation Conducted by bp personnel	
Notify the Environmental Field Compliance Coordinator at least 48 hours before beginning any soil excavation greater than one cubic yard. Provide the Environmental Field Compliance Coordinator with the site location, project coordinator's name and phone number, foreman's name and phone number, project start and end dates, expected start time, and approximate quantity of soil to be excavated.	Project Coordinator/Planner/

Activity	Responsibility
When notified of planned soil excavation: • Fill out the SCAQMD notification form (Attachment II) and send it to SCAQMD at least 24 hours prior to the start of excavation. Attach a copy of the refinery plot plan highlighting the general area of the excavation, a photocopy of the Check for $52.06 and the signature page from the Various Location plan to the form prior to faxing. Notification can be done by faxing the SCAQMD notification form to (909) 396-3342 or by calling (909) 396-2326 • After receiving the notification number from the SCAQMD, mail the original notification form, signature page, refinery plot plan, and check to: SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 203/1166 NOTIFICATIONS, FILE # 55641 LOS ANGELES, CA 90074-5641 • The reference number given by the SCAQMD at the time of notification should be kept as proof of compliance. Provide the project coordinator the reference number for the projects files. Verify that the current reference number is entered onto page 3 of the mitigation plan prior to turning the plan over to the job foreman. • For all excavations provide the project manager or site foreman with a copy of the Various Locations - VOC Contaminated Soil Mitigation Plan. Notify the project manager that a copy of this plan should be present at the excavation site at all times. • For excavations that are a result of spilled material or other incident requiring cleanup, treat material as if the VOC/VOHAP concentration is greater than 500 ppm (i.e. in accordance with Site Remediation NESHAPs). See procedure E302 for specific handling and storage requirements. In general, only store the remediation material in drums with closed covers and DOT-approved bins and dump trucks.	Environmental Field Compliance Coordinator
Excavation conducted by a Contractor	
Prior to starting excavation: • Fill out the SCAQMD notification form (Attachment II) and send it to SCAQMD at least 24 hours prior to the start of excavation. Attach a copy of the refinery plot plan highlighting the general area of the excavation, a photocopy of the Check for $52.06 and the signature page from the Various Location plan to the form prior to faxing. Notification can be done by faxing the SCAQMD notification form to (909) 396-3342 or by calling (909) 396-2326 • The **Responsible Party** signature line on the signature page of the plan must be signed by the Environmental Field Compliance Coordinator prior to submittal to the AQMD • Make sure to include all of the required contractor information. Including: AQMD ID #, Contractor corporate address, California State Contractor License Board #, Site contact name and contact phone number. • Include the fax back number at the top of the form. The AQMD will fax the notification page to that number with the notification number entered into the form. • After receiving the notification number from the SCAQMD, mail the original notification form, signature page, refinery plot plan, and check to: SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 203/1166 NOTIFICATIONS, FILE # 55641 LOS ANGELES, CA 90074-5641 • The reference number given by the SCAQMD at the time of notification should be kept as proof of compliance. Provide the project coordinator the reference number for the projects files. Verify that the current reference number is entered into page 3 of the mitigation plan prior to turning the plan over to the job foreman. • Insure that the signed copy of the 1166 plan is kept on site at the excavation.	Excavation Contractor/ Planner

Activity	Responsibility
OVA use and Monitoring (bp and contractor)	
• All monitoring shall be conducted by trained personnel who are proficient in the use of an Organic Vapor Analyzer (OVA) • A list of the personnel trained to use the OVA must be kept on site • The analyzers used for monitoring under this plan shall be on site and in good working order at all times. The analyzers shall also comply with the specifications and performance criteria specified by EPA method 21. • The analyzers shall be calibrated with hexane in accordance to the procedures of EPA method 21 at the beginning of each work day. The analyzers shall not be used to monitor for VOC under this plan unless the calibration precision is equal to or less than 10 percent on the calibration gas value. The analyzers shall be re-certified by the manufacturer at least once every three months. • Keep a copy of the 3 month calibration certificate with the OVA on the jobsite.	Foreman/OVA Specialist
Soil Monitoring Procedure (bp and contractor)	
The monitoring provisions listed below must be followed for all excavations of greater than one cubic yard. • Sampling for VOC shall be taken only from the soil excavated during the previous three minutes. The sampling shall be conducted by placing the probe at a distance of no more than 3 inches from the surface of the soil and while slowly moving the probe across the soil surface, and observing the instrument readout. If an increased meter reading is observed, continue to sample the excavated soil until the maximum meter reading is obtained. Leave the probe inlet at this maximum reading location for approximately double the instrument response time. Record the maximum reading on the Rule 1166 Soil Monitoring Records Form (Attachment I) • Monitor VOCs at least once every two cubic yard of soil excavated, not to exceed 15 minutes between readings • Record visual, odor, VOC monitoring results and bin and/or drum label number where soil is being accumulated on the Soil Monitoring Records form (Attachment I). • Make sure that the monitoring record is updated at least every 15 minutes. If you stop for a break, to move equipment or take lunch note it on the record. • Conduct a daily inspection of all bins and drums containing VOC contaminated soil. Note this inspection on the Rule 1166 Soil Monitoring Records Form (Attachment I).	Foreman/OVA Specialist
First Detection of Soil >50ppm VOC	
• **When VOC concentrations meet or exceed 50 ppm** • Contact the Environmental Field Coordinator immediately. If discovery is after normal business hours or on the weekend, contact the Shift Superintendent (501) or the on call environmental contact and follow proper procedures for VOC contaminated soil handling and disposal. • Label bins and/or drums as “SCAQMD Rule 1166 – VOC Contaminated Soil” • If possible make arrangements with the on-site waste contractor to move all VOC contaminated soil to the waste yard on Thursday afternoon for storage. The VOC contaminated soil must be inspected over the weekend	Foreman/OVA Specialist
• Complete the relevant sections of the SCAQMD Notification Form and submit it to the SCAQMD within 24 hours of the time when VOC contaminated soil was detected. Include a brief description of how the contaminated soil is being stored. Notification needs to be submitted the first time soil with VOCs of 50 ppm or greater are detected at the site. And resubmitted when the soil is greater than 1000 ppm of VOC.	Environmental Field Compliance Coordinator/ Contractor Rep.

Activity	Responsibility
VOC-contaminated Soil Handling & Disposal	

The following rules apply to handling of soil contaminated with VOCs, with concentrations between 50 and 1,000 ppm (or VOC concentrations greater than 500 ppm for contamination, resulting from spills or other activity requiring cleanup):
• For spill contamination or cleanup, use drums and bins that are Site Remediation NESHAPs-approved. See procedure E302 for specific requirements.
• Immediately spray working area with water or spray it with a SCAQMD-approved vapor suppressant, e.g., Ramco's PAC Attack.
• Spray each load of excavated soil with water or a SCAQMD-approved vapor suppressant and separate from uncontaminated soil.
• Use Bin management labels to identify the soil being collected in bins or drums. Record the highest VOC concentration of soil at point of generation on the label.
• Limit stockpiles of VOC-contaminated soil to 400 cubic yards.
• Whenever work stops for any reason, cover stockpiles of VOC-contaminated soil with continuous sheets of heavy-duty plastic and anchor the plastic to prevent exposure to the atmosphere.
  • The edges of the plastic must overlap by a minimum of 24 inches and be sealed with duct tape or folded over and anchored down with weights to prevent emissions.
• When removing VOC contaminated soil from a stock pile only the working face of the stock pile may be exposed.
• If the soil is stored in bins, the bins must be inspected daily. The inspection can be logged on the OVA monitoring record if the excavation is ongoing.
• Once the bins have been removed from the excavation site and are stored at the Resource Recovery Yard, the daily inspections will be preformed by the waste yard personnel.
• If any VOC contaminated soil is stockpiled, the excavation contractor is required to visually inspect soil stockpiles daily and record time, date and name of inspector.
  • A record if these inspection must be kept on site and made available to the inspector upon request.
• All VOC-contaminated soil must be removed from the refinery within 30 days of excavation.
• The Waste Engineer will decide on the final destination for disposal or remediation of the soil.
Special Handling requirements for soil >1000 ppm VOC
• The soil and excavated area must be immediately sprayed with water or an SCAQMD approved vapor suppressant
• As soon as possible, but not more than 15 minutes, place soil in sealed containers or vapor-tight bins.
• The bins must be kept in a vapor tight condition unless soil is actively being placed in the bin.
• The soil must remain undisturbed in the bin until the soil leaves the facility.
• The excavation must be kept covered with plastic and not exposed to the atmosphere. Only the working face of the excavation should be exposed.
 	
Do not engage in any on-site or off-site spreading of VOC-contaminated soil.
 	
Non-VOC Contaminated Soil Handling & Disposal
• If backfilling is not an option, the Waste Engineer will make all final decisions regarding handling and disposal of soil.
	Foreman/ Waste yard Supervisor

Activity	Responsibility
Soil Analysis & Waste Determination • Collect a soil sample or samples from the excavated soil and send it to the Waste Engineer (Sampling does not need to be done immediately, but must be done in time to classify the soil for disposal. If done prior to the beginning of the excavation it will speed up the disposal process). Waste engineer will arrange for laboratory analysis of the sample and, upon receipt of the analytical results, determine waste classification and evaluate options for managing the soil. **Clean Soil Storage & Use** Contact the Waste Engineer to stock pile uncontaminated soil in designated area waiting for disposal or future use as fill material. Be aware that soil cannot be stockpiled at any time in the refinery unless there is a plan for its immediate use or disposal.	Waste Yard Personnel/ Waste Engineer
30 Day Follow-up Reporting	
Bp conducted excavation	
Within thirty days of the completion of excavation, a follow-up close out report must be sent to the AQMD at: SOUTH COAST AIR QUALITY MGMT DISTRICT ENGINEERING & COMPLIANCE DIVISION TOXICS & WASTE MANAGEMENT UNIT (RULE 1166 COMPLIANCE) 21865 E. COPLEY DR. DIAMOND BAR, CA 91765-4182 The report must include the following records: • Total quantity of VOC contaminated soil excavated • VOC monitoring records of the excavated soil • Signed changes of custody for any transfer of the VOC contaminated soil including the AQMD identification number, business address of the generator, transporter and storage/treatment facilities, and quantity of soil removed from the site. • Calibration records of the analyzers used to monitor for VOC including daily and manufacturer calibration. The calibration records shall be signed and dated by the operator performing the calibration and kept on site during excavation • Daily inspection of the soil stored in bins or stockpiles. The inspection shall include at a minimum the date, time of inspection, name, and brief description of the location, integrity of the bin or stockpile, any problems identified and the repairs taken to mitigate the release of VOCs. o There must be a daily record of inspection including weekends and holidays. • Notifications made to the AQMD including the notification numbers • A brief summary of the excavation including the status of the excavated area and the status of all VOC contaminated soil. A copy of the follow up report must be sent to the environmental file: 3E01-0019269	Environmental Field Compliance Coordinator
Contractor Conducted Excavation	
Within thirty days of the completion of excavation, a follow-up close out report must be sent to the AQMD at: SOUTH COAST AIR QUALITY MGMT DISTRIC ENGINEERING & COMPLIANCE DIVISION TOXICS & WASTE MANAGEMENT UNIT (RULE 1166 COMPLIANCE) 21865 E. COPLEY DR. DIAMOND BAR, CA. 91765-4182	Contractor Representative

Activity	Responsibility
The report must include the following records: • Total quantity of VOC contaminated soil excavated • VOC monitoring records of the excavated soil • Signed changes of custody for any transfer of the VOC contaminated soil including the AQMD identification number, business address of the generator, transporter and storage/treatment facilities, and quantity of soil removed from the site. • Calibration records of the analyzers used to monitor for VOC including daily and manufacturer calibration. The calibration records shall be signed and dated by the operator performing the calibration and kept on site during excavation • Daily inspection of the soil stored in bins or stockpiles. The inspection shall include at a minimum the date, time of inspection, name, and brief description of the location, integrity of the bin or stockpile, any problems identified and the repairs taken to mitigate the release of VOCs. o There must be a daily record of inspection including weekends and holidays. • Notifications made to the AQMD including the notification numbers • A brief summary of the excavation including the status of the excavated area and the status of all VOC contaminated soil. A copy of the follow up report must be sent to the Environmental Field Compliance Coordinator • The close out report will be put into the environmental file: 3E01-0019269	

SECTION III - ATTACHMENTS

ATTACHMENT I - Rule 1166 Soil Monitoring Records

BP West Coast Products LLC 1801 E. Sepulveda Blvd. Carson, CA 90749 Plan #: ID #: 131003	Facility/Site Information BP West Coast Products LLC – Carson Business unit Name: Carson Refinery Address: 1801 E. Sepulveda Blvd.
Reference No(s).	City: Carson, CA Zip: 90749

Monitor Information	Calibration Data	Verification Data	Monitoring Personnel	Excavation Summary (Upon completion of each page)	
Brand/Model:	Date:	Date:	Name:	Total Cubic Yds (This page)	
Type:	Gas/PPM:	Gas/PPM:	Company:	Total Cubic Yds (To date)	
Serial No.	By:	By:	Phone:	Removed from Site (To date)	

Time	VOC Concentration (PPMV) @ Excavated Load			Comment (Background, Wind speed)	Time	VOC Concentration (PPMV)@ Excavated Load			Comment (Background, Wind speed)
Every 15 min.	Reading	Hexane Factor	Adjusted Reading		Every 15 min.	Reading	Hexane Factor	Adjusted Reading	

I certify that the information contained in the above document is true and correct. I further certify that the above listed hydrocarbon monitor was operated in a manner consistent with the manufacturer's specifications and the conditions specified within this plan. In addition, I certify that the above readings represent the actual measurements I observed and recorded during the excavation process.

SIGNATURE:_____ DATE:_____

ATTACHMENT II

Rule 1166 Notification Form

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Rules 203 or R1166 NOTIFICATION FORM

Use this form to notify of known or suspect VOC contaminated soil Excavation, Handling and/or Monitoring; Mitigation/Treating of VOC contaminated soil; and VOC Vapor Extraction. See instructions on the back of this form.
For questions check our website at www.aqmd.gov or call the Hotline at (909) 396-2326.
FAX this form to 909-396-3342 and within 48 hours of fax MAIL the original form and fee to:
SCAQMD – 1166/203 Notifications, File # 55641, Los Angeles, CA 90074-5641
This form will be faxed back to you with a REFERENCE number if you provide a FAXBACK # here:

AQMD USE ONLY	RECEIVED BY		POSTMARK		REFERENCE #
COMPLETED BY			Company		Phone #
Date	Check #		Amount $		Project #
NOTIFICATION TYPE	Original (Initial)	Revision (prior reference #)		Cancellation (prior reference #)	
PROJECT TYPE (circle one only)	R1166 Soil / Tank Excavation	Soil Vapor Extraction (SVE)	VOC Contaminated Soil Mitigation / Treating	Reporting > 50 ppm VOC Contaminated Soil	Reporting > 1000 ppm VOC Contaminated Soil
Provide the R1166 mitigation plan name and number when reporting soil excavation, tank removal or contaminated soil Mitigation Plan issued to: Plan #				For reporting VOC > 50 or 1000 ppm only Date & time of VOC exceedance Highest VOC reading in ppm	
Provide the Soil Vapor Extraction unit permit name and number when reporting use of an SVE unit Permit issued to: Permit # Distance to nearest sensitive receptor in feet (see your permit condition requirements)					
PROJECT DATES	START		END		WORK SHIFT (day, swing, night)
SITE CONTRACTOR INFORMATION	AQMD ID #		CSLB License #		Phone #
Name			Address		
City		Zip	Site supv name & phone #		
SITE INFORMATION	Site Name			Site AQMD ID #	
Site Address				Cross Street	
Site City		Zip	Site contact name & phone #		

TANK INFORMATION	# OF TANKS	EACH	CAPACITY (gal)	MATERIAL STORED IN TANK	ABOVE GROUND? (Y/N)
		@			
		@			
Example	*3 tanks*	@	*10,000*	*Gasoline*	*no*

INFORMATION CERTIFICATION	I certify that the above information is complete and accurate			
Company Name		Print Name	Signature	Date
COMMENTS				

INSTRUCTIONS FOR SCAQMD RULES 203 and 1166 NOTIFICATION FORM

Use this form to notify of known or suspect VOC contaminated soil Excavation, Handling and/or Monitoring; Mitigation/Treating of VOC contaminated soil; and VOC Vapor Extraction.
For questions check our website at www.aqmd.gov or call the Hotline at (909) 396-2326

WHERE TO FAX AND MAIL YOUR NOTIFICATION AND FEE
Rule 301(ab) requires any person or operator required to submit a notification per Rule 1166 or Rule 203 - Soil Vapor Extraction projects to pay a notification fee. Any questions call the Hotline at 909-396-2326.

FAX all notifications to (909) 396-3342
MAIL the form and fee to within 48 hours of fax to:
SCAQMD Rule 1166 / 203 Notifications, File # 55641, Los Angeles, CA 90074-5641

NOTIFICATIONS MUST CONTAIN THE FOLLOWING INFORMATION:
Faxback # - Provide your fax # at the top of the Notification Form if you want a Reference # faxed back to you.

Notification Type – Circle the type of Notification. Original is for new or initial Notifications. Revisions are for updating information on notifications in which the project End Date has not expired. Provide the most recent prior Reference # issued for Revisions and Cancellations. The fee applies to *each* required notification

Project Type - Circle the type of work you are submitting a notification for. A separate notification and fee is required for each type of work selected.

Mitigation Plan/Permit - Each Project Type requires a valid Mitigation Plan *or* Permit #.

Site Contractor Information - Provide the required information for the actual contractor *doing the work*. The AQMD ID #, also know as Company or Facility ID #, can be found on the contractor's AQMD permits, Mitigation Plans or invoices.

Site Information - Provide the site name and complete address. Include the street number and name, city, zip code, and nearest cross street. Give more detailed directions if you think the site is difficult to locate.

Project Dates - Provide the project Start and End Dates. Any changes will require a Revision notification.

Tank Information – For tank excavation specify the tank capacity and the VOC material stored and if the tank is underground or above ground.

Information Certification - The contractor doing the work, or an authorized representative, must sign and date the notification to confirm that the information provided is complete and accurate.

SOIL/TANK EXCAVATION NOTIFICATION Rule 1166(c)(1)(B) Notify 24 hours prior to excavation when:
Notifying of intent to *Excavate* known or suspected VOC storage and/or transfer equipment (includes diesel and waste oil tanks), or *handling* known or suspected VOC contaminated soil.
NOTE: Soil excavation > 5,000 cubic yards may require a pre-approved AQMD Rule 403 Fugitive Dust Plan.

MONITORING NOTIFICATION - Rule 1166(c)(1)(D)(ii) Notify within 1 hour or 24 hours of detecting VOC when:
Notifying of *finding/detecting* VOC contaminated soil greater than 50 ppm or 1000 ppm

- Notify within 1 hour of detecting VOC greater than 1000 ppm*
- Notify within 24 hours of detecting VOC greater than 50 ppm

EMERGENCY NOTIFICATION Rule 1166(c)(1)(B) Notify prior to start work when:
Notify of any incident declared as an emergency by an authorized agency that requires the tank removal/repairs or excavating and handling of known or suspected VOC contaminated soil:

- Call 1-800-CUT-SMOG prior to excavating or fax the emergency notification to 909-396-3342 and
- Mail the notification within 48 hours after the excavation (include the agency Order or Declaration)

SOIL VAPOR EXTRACTION NOTIFICATION – Rule 203* Notify upon the 5th day after operating at a new site:
Notifying of *start-up* or *testing* of operation of portable Soil Vapor Extraction equipment lasting 5 days or more. Provide the distance in feet to the nearest sensitive receptor *if* the site is located less than ¼ mile from any Long-Term Health Care Facility, Rehabilitation Center, Convalescent Center, Retirement Home, Residence, School, Playground, Child Care Center or Athletic Facility. * Refer to your SVE permit condition requirements.

MITIGATION/TREATING NOTIFICATION – Rule 203* Notify per Plan or Permit condition requirements when:
Notifying of on-site *mitigation* or *treating* of VOC contaminated soil (see your Permit condition requirements).

APPENDIX D-2

BP CARSON EXCAVATION PLANNING AND SOILS MANAGEMENT PROCEDURE E112

BP - Carson Business Unit
Policy & Procedure

EXCAVATION PLANNING AND SOIL MANAGEMENT

Table of Contents

List of Attachments

SECTION I - POLICY

DESCRIPTION

Excavations conducted at the BP Carson Refinery have the potential to uncover soil that is contaminated with volatile compounds and hazardous materials. A number of rules and regulations specify soil monitoring, handling and storage requirements to prevent these volatile compounds or hazardous materials from being released to the environment during and after the excavation process. In addition, some locations within the refinery have been identified as requiring special excavation procedures because of historical use or activities performed at these locations.

Site Remediation MACT (SR MACT), also known as Site Remediation NESHAPS [40 CFR 63 Subpart GGGGG], is a regulation that imposes excavation requirements for soils contaminated with Volatile Organic Hazardous Air Pollutants (VOHAPS). A list of SR MACT HAPs is provided in Attachment A. Laboratory analysis is required to determine VOHAP levels, thus, pre-assessment is an important part of the excavation planning process Pre-assessment is recommended for all excavations that generate ≥ 20 yd3 of soil and required for all excavations ≥ 400 yd3 of soil. . If an excavation location is not pre-assessed, then the excavated soil must be treated as VOHAP-contaminated soil until the results of post-excavation samples are obtained. The focus of this document is planning for compliance with the SR MACT requirements and other regulatory requirements. Policy & Procedure E302, High VOC Wastes (RCRA Subpart CC and Site Remediation NESHAPs) outlines requirements for handling of high VOC wastes in bins and containers after excavation/generation.

SCAQMD Rule 1166, Volatile Organic Compound Emissions from Decontamination of Soil, is primarily concerned with soils contaminated with Volatile Organic Compounds (VOC). Since hand-held Photoionization Detectors (PID) can be used to detect the presence of VOCs, the Rule 1166 requirements focus on monitoring during the excavation. The Rule 1166 requirements are discussed in detail in Policy & Procedure E107, VOC in Soils Handling (AQMD Rule 1166).

SCAQMD Rule 1150, Excavation of Landfill Sites; SCAQMD Rule 1403, Asbestos Emissions from Demolition/Renovation Activities; and Asbestos NESHAP [40CFR61 Subpart M] apply to the Northeast portion of the refinery, a former asbestos manufacturing facility that is now categorized as an inactive asbestos landfill. Policy & Procedure E211, Northeast Property Excavation, includes a map showing the boundaries of this area, and also details the specific requirements that apply to excavations performed in this area.

Other refinery areas with excavation restrictions are designated Solid Waste Management Units (SWMUs). A map showing the locations of these areas is provided in Attachment B. Note that no excavation is allowed in these areas unless approved by the Remediation Management Engineer (RME) and/or the Waste & Maintenance Engineer (WE).

Before an excavation is conducted, it is important to a) assess whether the location is within the boundaries of an excavation-restricted refinery area; and b) develop a strategy for identifying and complying with applicable rules and regulations, which may include pre-excavation soil sampling and analysis.

The CBU has a limited number of areas with special restrictions on excavations (primarily SWMUs and the inactive asbestos landfill). All other areas have unknown levels of soil

contamination, if any, and must be characterized during the excavation planning process or during the excavation itself. A decision tree flow chart based on the excavation category (location as well as size), provided as Attachment C, identifies the excavation planning requirements and regulatory requirements for storage and handling of different categories of contaminated soils.

The size of an excavation (cubic yards of soil to be excavated) is a key factor that impacts the course of action with regard to the amount of pre-planning and pre-assessment that is required or recommended. Extensive planning and pre-sampling is not required for small excavations. For large excavations, pre-assessments are required, and a site-specific monitoring plan must be approved prior to the excavation. The pre-assessment is aimed at conducting field sampling and performing laboratory analysis prior to the excavation to identify soil handling requirements and a cost effective plan to manage the soils to be excavated. The results will also be useful in assessing potential hazards to personnel and identifying appropriate worker controls and personal protective equipment (PPE).

OBJECTIVE

The objective of this policy & procedure is to specify the planning requirements for excavations and outline the requirements for excavations based on location and size. In addition, this procedure identifies the requirements for handling, storage, and disposal of excavation soils based on their contamination classification. This document focuses on the pre-planning required to comply with SR MACT and other soil handling requirements.

DEFINITIONS

Asbestos Containing Material - Any material containing more than one percent (1%) asbestos.

Container - A container is any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled (40 CFR §260.10). The definition is broad enough to include some of the following: 55-gallon drum made of steel or plastic, a large tanker truck, a railroad car, or a bucket.

Hazardous Waste - A waste (solid or liquid) that is regulated under 40 CFR §261 or Title 22 of the California Code of Regulations. Wastes are considered hazardous if they are listed as hazardous by EPA or California or if they exhibit certain characteristics (ignitability, corrosivity, reactivity or toxicity).

Manifest - The form that identifies the name, quantity, and the origin, routing, and destination of waste during its transportation from the point of generation to the point of disposal, treatment, or storage.

PID Screening - A field screening method for the detection of VOCs. (PID is photoionization detector)

Site Remediation MACT (SR MACT) - Site Remediation MACT (40 CFR §63 Subpart GGGGG) sets standards to control emissions of Hazardous Air Pollutants (HAPs) from site remediation activities which includes soil excavation. Sometimes referred to as Site Remediation NESHAPs.

RELEVANT DOCUMENTS

- 40 CFR 63 Subpart GGGGG, Site Remediation MACT
- SCAQMD Rule 1166, Volatile Organic Compound Emissions from Decontamination of Soil
- SCAQMD Rule 1166 Various Locations Contaminated Soil Mitigation Plan
- SCAQMD Rule 1150, Excavation of Landfill Sites
- SCAQMD Rule 1403, Asbestos Emissions from Demolition/Renovation Activities
- Asbestos NESHAP [40CFR61 Subpart M]
- Policy & Procedure E107, VOC in Soils Handling (AQMD Rule 1166)
- Policy & Procedure E208, Fugitive Dust
- Policy & Procedure E211, Northeast Property Excavation
- Policy & Procedure E302, High VOC Wastes (RCRA Subpart CC and Site Remediation NESHAPS)
- Policy & Procedure E806, Waste Determination
- Policy & Procedure E303, Waste Storage Yard
- Policy & Procedure E304, Satellite Accumulation Areas
- Policy & Procedure E301, Container & Temporary Tank Labeling
- Policy & Procedure F/S 520, Excavations and Shoring
- Policy & Procedure F/S 1010, Excavation Inspection and Soil Monitoring
- Policy & Procedure F/S 1011, Excavations and Protection System
- Policy & Procedure L-014, Excavations or Ground Disturbance

SECTION II – PROCEDURE

EXPM = Excavation Project Manager
EXC = Excavation Contractor
EXF = Excavation Foreman
ECC = Environmental Compliance Coordinator
WE = Waste & Maintenance Engineer
RME = Remediation Management Engineer
WHC = Waste Handling Contractor
H&S = Health & Safety Department

Refer to Attachment C for "Excavation Planning Flow Chart Based on Categories of Excavation Area and Excavation Size" to complement this procedure

Activity	Responsibility
Identification of Excavation Location Category	
When the need for an excavation is identified, the Excavation Project Manager (EXPM) makes the initial determination of the location category using the map of restricted areas provided in this procedure (Attachment B) and the map in Procedure E211.	EXPM
Approvals for Excavations in Restricted Areas – Northeast Area	
If the excavation location is within the boundaries of the Northeast Area, refer to E211, contact the Waste & Maintenance Engineer (WE), and wait for approval and guidance before proceeding.	EXPM
Evaluate the need for excavation and provide guidance per procedure E211.	WE
Approvals for Excavations in Restricted Areas – Other Restricted Areas	
If the excavation location is within the boundaries of the restricted areas depicted in Attachment B of this procedure, contact the WE or Remediation Management Engineer (RME) and wait for approval before proceeding.	EXPM
Evaluate case-specific need for excavation, and provide approvals as warranted.	WE/RME
Excavation Size Evaluation	
Prepare a preliminary estimate of the amount of soil that will be disturbed during the excavation.	EXC
Minor Excavation, < 1 yd^3 soil	
Perform excavation; no pre-sampling or VOC monitoring for AQMD Rule 1166 is required.	EXF
Use appropriate PPE and safety procedures (see F/S 1011) in performing excavation.	EXF
Place soil in drum(s) or other appropriate waste container(s) as designated by the WHC if intended for disposal or stockpile for backfill if no apparent contamination. Install and secure cover over container except when added or removing soil.	EXF
Contact waste handling contractor (WHC) when containers are full or excavation is complete. Transfer containers within 3 days of filling to	EXF

Activity	Responsibility
designated drop-off area.	
Appropriately identify bins/containers as whether subject to SR MACT in the waste database and verify database.	WHC
Small Excavation, 1 – 20 yd^3 soil or Routine Construction/Maintenance	
Contact Environmental Compliance coordinator x5637 (ECC) regarding Rule 1166 requirements; see Procedure E107	EXC
Review excavation details and develop strategy for Rule 1166 compliance per Procedure E107.	ECC
Follow all 1166 requirements (see Procedure E107) per ECC, and: • If there is no apparent soil contamination and PID readings are less than 50 ppm, place soil in drums if intended for disposal or stockpile for backfill. • If soil contamination is apparent or PID readings are ≥ 50 ppm o Follow SR MACT handling and storage requirements (described in SR MACT Labeling, Storage and Transfer Requirements section) o Label as SR MACT VOHAP Contaminated Soil Pending Characterization	EXF
Use appropriate PPE and safety procedures (see F/S 1011) in performing excavation.	EXF
Track the number of containers/bins on Excavation Log form (Attachment E)	EXF
Contact waste handling contractor (WHC) when containers are full or excavation is complete. Transfer containers within 3 days of filling to designated drop-off area (waste yard or approved area).	EXF
Appropriately identify bins/containers as whether subject to SR MACT in the waste database and verify database against Excavation Log Form. Complete bottom portion of Excavation Log form (Attachment E).	WHC
Medium Excavation, 20 – 400 yd^3 soil	
Contact WE with information in Pre-assessment Form (Attachment D) if a pre-assessment will be conducted. (Pre-assessment is highly recommended to clearly define requirements and to control soil management costs)	EXPM
If pre-assessment is conducted, review data from Attachment D- Excavation Pre-Assessment Reporting Form and develop pre-assessment sampling plan. Review with WHC to ensure that containers are available and samples are handled according to the plan.	WE
Contact Environmental Compliance Coordinator (ECC) regarding Rule 1166 requirements; see Procedure E107	EXC
Review excavation details and develop strategy for Rule 1166 compliance per Procedure E107.	ECC
Follow all 1166 requirements (see Procedure E107) per ECC.	EXF
If no pre-assessment is conducted, then: • Follow most strict SR MACT handling and storage requirements	EXF

Activity	Responsibility
(described in SR MACT Labeling, Storage and Transfer Requirements section) • Label as SR MACT VOHAP Contaminated Soil Pending Characterization	
If pre-assessment is conducted, ensure that appropriately trained personnel perform pre-assessment sampling according to plan and submit samples to WHC for analysis.	EXPM
If pre-assessment is conducted, notify excavator of sample results (VOHAP level) / waste determination and provide guidance for performing excavation to comply with environmental requirements.	WE
Review sample results for potential hazards to excavation personnel and contact H&S as necessary to identify appropriate health and safety requirements.	EXF
Use appropriate PPE and safety procedures (see F/S 1011) in performing excavation.	EXF
Appropriately segregate contaminated soils and follow SR MACT requirements based on VOHAP contamination level and guidance provided by WE if pre-assessment was performed. • VOHAP < 10 ppm o No SR MACT requirements apply o Follow 1166 procedures (E107) • 10 ppm ≤ VOHAP < 500 ppm o Follow SR MACT procedures (described in SR MACT Labeling, Storage and Transfer Requirements section) for labeling and transfer only o Follow 1166 procedures (E107) for notifications, excavation monitoring and labeling. • VOHAP ≥ 500 ppm o Follow SR MACT procedures (described in SR MACT Labeling, Storage and Transfer Requirements section) for labeling, storage and transfer o Follow 1166 procedures (E107) for notifications, excavation monitoring and labeling. NOTE: Assume VOHAP≥ 500 ppm if no pre-assessment was completed.	EXF
Track the number of containers/bins on Excavation Log form (Attachment E)	EXF
Contact waste handling contractor (WHC) when containers are full or excavation is complete. Transfer containers within 3 days of filling to designated drop-off area.	EXF
Appropriately identify bins as whether subject to SR MACT in the waste database and verify database against Excavation Log Form. Complete bottom portion of Excavation Log form (Attachment E).	WHC
Large Excavation, ≥ 400 yd^3 soil	
Contact WE with information in Pre-assessment Form (Attachment D) (Pre-	EXPM

Activity	Responsibility
assessment is required).	
Review data from Attachment D- Excavation Pre-Assessment Reporting Form and develop pre-assessment sampling plan. Review with WHC to ensure that containers are available and samples are handled according to the plan..	WE
Contact Environmental Compliance Coordinator (ECC) regarding Rule 1166 requirements; see Procedure E107	EXC
Review excavation details and develop strategy for Rule 1166 compliance per Procedure E107.	ECC
Follow all 1166 requirements (see Procedure E107) per ECC.	EXF
Ensure that appropriately trained personnel perform pre-assessment sampling according to plan and submit samples to WHC for analysis.	EXPM
Notify excavator of sample results (VOHAP level) / waste determination and provide guidance for performing excavation to comply with environmental requirements	WE
Review sample results for potential hazards to excavation personnel and contact H&S as necessary to identify appropriate health and safety requirements.	EXF
Use appropriate PPE and safety procedures (see F/S 1011)	EXF
Appropriately segregate contaminated soils and follow SR MACT requirements based on VOHAP contamination level and follow guidance provided by WE as a result of pre-assessment. • VOHAP < 10 ppm o No SR MACT requirements o Follow 1166 procedures (E107) • 10 ppm ≤ VOHAP < 500 ppm o Follow SR MACT requirements (described below) for labeling and transfer only o Follow 1166 procedures (E107) for notifications, excavation monitoring and labeling. • VOHAP ≥ 500 ppm o Follow SR MACT procedures for labeling, storage and transfer o Follow 1166 procedures (E107) for notifications, excavation monitoring and labeling	EXF
Track the number of containers/bins on Excavation Log Form (Attachment E)	EXF
Contact waste handling contractor (WHC) when containers are full or excavation is complete. Transfer containers within 3 days of filling to designated drop-off area.	EXF
Appropriately identify bins as whether subject to SR MACT in the waste database and verify database against Excavation Log Form. Complete bottom portion of Excavation Log form (Attachment E).	WHC

Activity	Responsibility
EMERGENCY EXCAVATIONS	
Notify ECC (or 501, who will notify Environmental on-call rep) via phone, email or in person prior to beginning excavation.	EXPM
If the incident requiring the emergency excavation was triggered following an Incident Command System (ICS) response, a specific waste management plan will be required. This plan will be created by the Waste adn Prevention Programs Engineerand approved by the HSSE incident command officer.	ICS Incident Command Officer / WE
Make appropriate Rule 1166 notifications per E107.	ECC or on-call Env. Rep.
Contact WHC to request that containers be made available.	EXF
Make containers available for emergency excavation use.	WHC
Follow all 1166 requirements (see Procedure E107) per ECC.	EXF
Use appropriate PPE and safety procedures (see F/S 1011)	EXF
No pre-assessment is conducted for emergency excavations, so • Follow the most strict SR MACT handling and storage requirements (i.e. assume VOHAP ≥ 500 ppm) • Label as SR MACT VOHAP Contaminated Soil Pending Characterization	EXF
Track the number of containers/bins on Excavation Log form as practical (Attachment E)	EXF
Contact waste handling contractor (WHC) when containers are full or excavation is complete. Transfer containers within 3 days of filling to designated drop-off area.	EXF WHC
Appropriately identify bins as whether subject to SR MACT in the waste database and verify database against Excavation Log Form. Complete bottom portion of Excavation Log form as practical (Attachment E).	WHC
SR MACT Labeling and Storage Requirements	
SR MACT Labeling Requirements	
Label as “SR MACT VOHAP Contaminated Soil”	EXF
SR MACT Storage Requirements	
Place excavated soil directly in an appropriate container which is with a secure cover except when adding or removing soil to container. Note that an appropriate container typically consist of the following: o Roll-off bin or end dump (certified vapor tight) o Drum with properly secured top, or o Certified vacuum truck only opened when adding or removing material. Contact ECC for guidance.	EXF
Excavation Pre-Assessment Information	
Submit the following information to the WE (Use Attachment D Form): • Purpose of excavation (new construction, maintenance);	EXPM

Activity	Responsibility
• Location of excavation on a scaled map; • Expected date of excavation; • Size of excavation, • Depth of excavation; • Any special considerations (known releases, types of wastes and products managed); and • Intended use of excavated soil, including backfill at original locations; reuse at different locations within the CBU; or off-site disposal.	
Provide the following information to the Excavator based on pre-assessment form data: • Number of samples needed • Locations and depths of soil sample locations; • Type of sample analysis needed Provide the following information to the Excavator based on pre-assessment sampling results • Type of containers needed for excavated soils • Type of vapor controls needed during excavation • Type of labels to be used	WE
Review sample results for potential hazards to excavation personnel and contact H&S as necessary to identify appropriate health and safety requirements. Determine appropriate health and safety requirements (see F/S 1011).	EXF
SR MACT Offsite Transfer Requirements	
Based on guidance provided by the WE and scope of excavation, transfer excavated soil within 30 days of beginning of excavation to an appropriate offsite facility to qualify for exemption provided by SR MACT regulation. Document meeting 30 day period on Excavation Log form (Attachment E).	WHC
If 30 day period is not met to qualify for SR MACT exemption, perform monitoring of containers and send soil to an offsite facility that meets SR MACT requirements (See E302).	WHC

SECTION III - ATTACHMENTS

Attachment A Site Remediation MACT HAPs List

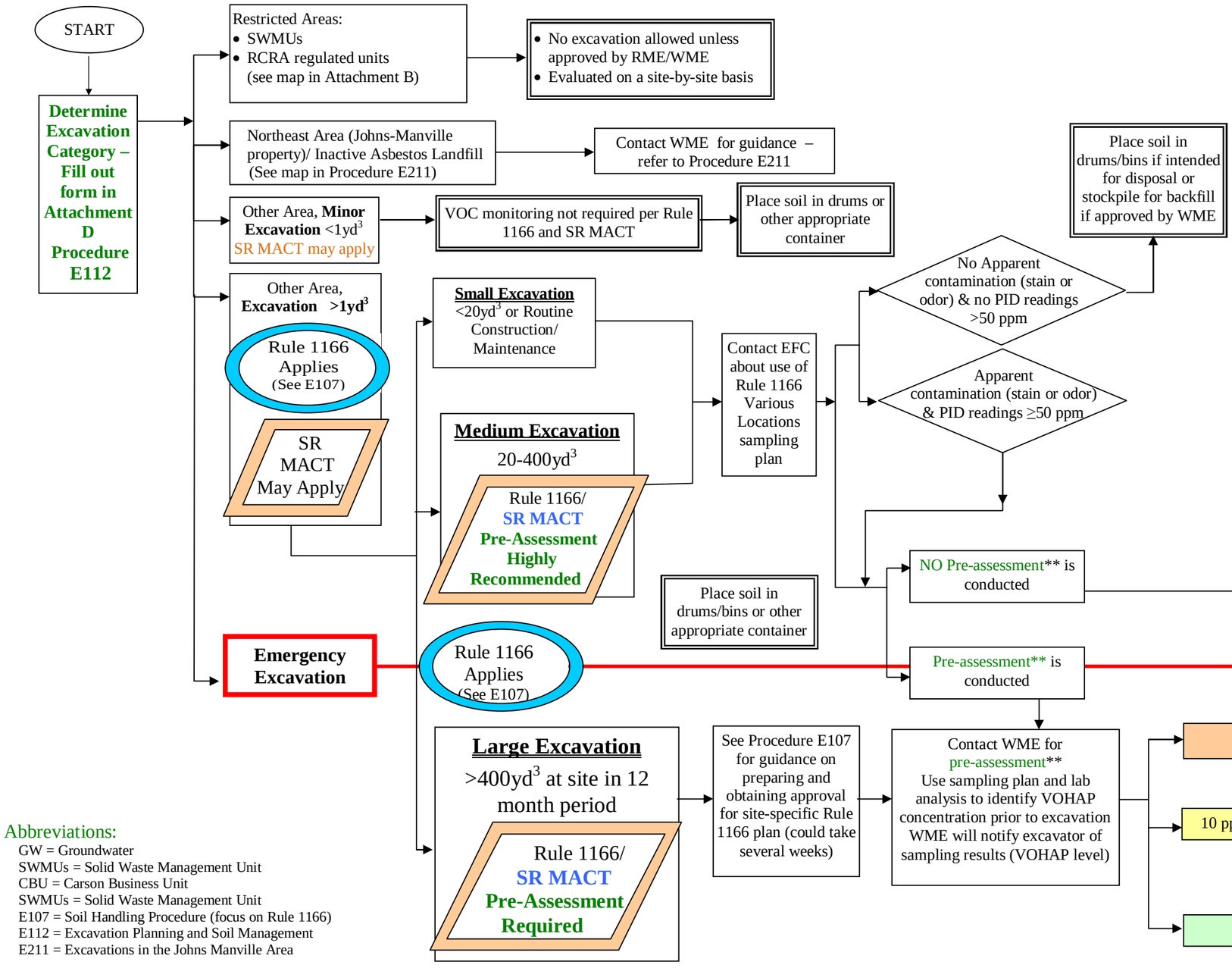
Attachment B Site Map showing Restricted Areas/SWMUs

Attachment C Excavation Planning Flow Chart Based on Categories of Excavation Area and Excavation Size

Attachment D Excavation Pre-Assessment Reporting Form

Attachment E Excavation Log Form

Attachment C. Excavation Planning Flow Chart Based on Categories of Excavation Area and Excavation Size



** Pre-assessment involves following an approved sampling plan prior to the excavation. Samples must be analyzed for VOHAP concentrations (results take up to two weeks). Samples must be collected following an approved sampling plan. Approval is obtained through the WME.
Benefits of pre-assessment:

- Determine whether soil is non-hazardous and can be stockpiled
- Identify the type and # of containers needed for contaminated soil
- Assist the excavators in planning for soil handling requirements and appropriate PPE

*** * Site Remediation MACT (SR MACT) Procedures:**

SR MACT Labeling Requirements (Contact WME for labeling requirements)
"SR MACT VOHAP Contaminated Soil"

SR MACT Storage Requirements
Place soil in containers as excavated and install/secure cover except when adding or removing soil from container. Typical containers include:

- Roll-off bin or end dump (certified vapor tight);
- Drum with properly secured top, or
- Certified vacuum truck only opened when adding or removing material

SR MACT Transfer Requirements
Based on guidance provided by the WME and scope of excavation, transfer excavated soil within 30 days of beginning of excavation to an appropriate offsite facility to qualify for exemption provided by SR MACT regulation. Otherwise, perform monitoring of containers and send soil to an offsite facility that meets SR MACT requirements
(see E302)

Abbreviations:
GW = Groundwater
SWMUs = Solid Waste Management Unit
CBU = Carson Business Unit
SWMUs = Solid Waste Management Unit
E107 = Soil Handling Procedure (focus on Rule 1166)
E112 = Excavation Planning and Soil Management
E211 = Excavations in the Johns Manville Area

Important Contact Information:
WME = Waste & Maintenance Engineer
RME = Remediation Management Engineer
EFC = Environmental ComplianceCoordinator

VOC level → (based on PID measurements) **VOHAP level ↓** (based on analytic results)	**VOC < 50 ppmv**	**50 ≤ VOC < 1000 ppmv**	**VOC ≥ 1000 ppmv**
VOHAP < 10 ppmv	No labeling or special storage OK to stockpile (<400 yd^3) if approved by WME	1166_{50} label Storage per Rule 1166 requirements Transfer per Rule 1166 requirements	1166_{1000} label Storage per Rule 1166 requirements Transfer per Rule 1166 requirements
10 ppmv ≤ VOHAP < 500 ppmv	SR MACT label No special storage Transfer per SR MACT requirements	SR MACT, 1166_{50} labels Storage per Rule 1166 requirements Transfer per SR MACT requirements	SR MACT, 1166_{1000} labels Storage per Rule 1166 requirements Transfer per SR MACT requirements
VOHAP ≥ 500 ppmv OR No pre-assessment conducted (VOHAP not known)	SR MACT label Storage per SR MACT requirements Transfer per SR MACT requirements	SR MACT, 1166_{50} labels Storage per SR MACT requirements Transfer per SR MACT requirements	SR MACT, 1166_{1000} labels Storage per SR MACT requirements Transfer per SR MACT requirements

TYPES OF LABELS

1166_{50} Label, 1166_{1000} Label
See Procedure E107

SR MACT Labeling Requirements
"SR MACT VOHAP Contaminated Soil"

TYPES OF TRANSFER

1166 Transfer Requirements
See Procedure E107

SR MACT Transfer Requirements
See Procedure E302

TYPES OF STORAGE

Rule 1166 Storage Requirements
See Procedure E107

SR MACT Storage Requirements
See Procedure E302

Attachment A Site Remediation MACT Hazardous Air Pollutants (HAPs) List

Acetaldehyde	Hexachlorobutadiene
Acetonitrile	Hexachloroethane
Acetophenone	hexane
Acrolein	Isophorone
Acrylonitrile	Lindane (all isomers)
Allyl chloride	Methanol
Benzene	Methyl bromide (Bromomethane)
Benzotrichloride	Methyl chloride (Choromethane)
Benzyl chloride	Methyl chloroform (1,1,1-Trichloroethane)
Biphenyl	Methyl iodide (Iodomethane)
Bis(chloromethyl)ehter	Methyl isobutyl ketone (Hexone)
Bromoform	Methyl isocyanate
1,3-Butadiene	Methyl methacrylate
Carbon disulfide	Methyl tert butyl ether
Carvon Tetrachloride	Methylene chloride (Dichloromethane)
Carbonyl sulfide	Naphthalene
Chloramben	Nitrobenzene
Chlorobenzene	2-Nitropropane
Chloroform	Pentachloronitrobenzene (Quintobenzene)
Chloromethyl methyl ether	Pentachloophenol
Chloroprene	Phosgene
Cumene	Proplonaldehyde
2,4-D, salts and esters	Propylene dichloride (1,2-Dichloroporpane)
Diazomethane	Propylene oxide
Dibenzofurans	1,2-Propytenimine (2-Methyl aziridine)
B1,2-Dibromo-3chloropropane	Styrene
1,4-Dichlorobenzene(p)	Styrene oxide
Dichloroethane (Ethylene dichloride)	1,1,2,2-Tetrachloroethane
Dichloroethyl ether Bis(2-chloroethylether)	Tetrachloroethylene (Perchloroethylene)
1,3-Ddichloropropene	Toluene
Diethyl sulfate	o-Toluidine
Dimethyl carbomoyl chloride	1,2,4-Trichlorobenzene
Dimethyl sulfate	1,1,1-Trichloroethane (Methyl chlorform)
N,N-Dimethylaniline	1,1,2-Trichloroethane (Vinyltrichloride)
2,4-Dinitrophenol	Trichloroethylene
2,4-Dinitrotoluene	2,4,5-Trichlorophenol
1,4-Dioxane (1,4-Diethyleneoxide)	2,4,6-Trichlorophenol
Epichlorohydrin (1-Chloro-2,3-epolypropane)	Triethylamine
1,2-Epoxybutane	2,2,4-Trimethylpentane
Ethyl acrylate	Vinyl acetate
Ethyl benzene	Vinyl bromide
Ethyl chloride (Chloroethane)	Vinyl chloride
Ethylene dibromide (Dibromoethane)	Vinylidene chloride (1,1-Dichloroethylene)
Ethylene dichloride (1,2-Dichloroethane)	Xylenes (isomers and mixture)
Ethylene imine (Aziridine)	o-Xylenes
Ethylene oxide	m-Xylenes
Ethylene dichloride (1,1-Dichloroethane)	p-Xylenes
Hexachlorobenzene	

ATTACHMENT B (SITE MAP) HAS BEEN OMITTED FROM THIS COPY OF THE PROCEDURE.

Attachment D
Excavation Reporting Form

Submit this information to the WE at least 1 month prior to excavation	
Information Prepared by:	Date:
Excavator Contact Information	
Company Name:	
Contact Name:	
Street Address:	
City, State, ZIP:	Phone:

Project Name/Description	
Location of Planned Excavation	_____ **Also attach scaled refinery map indicating location of planned excavation**
Purpose of Excavation	❒ New Construction ❒ Maintenance ❒ Other (comment below) _____
Expected Date of Excavation	Start Date _____ End Date _____
Approximate Size of Excavation (ft^3 of soil excavated)	❒ < 1yd^3 ❒ 1-20 yd^3 (1 bin) ❒ 20-400 yd^3 (1-20 bins) ❒ ≥ 400 yd^3 (>20 bins) Additional information, if available _____
Depth of Excavation	
Special Considerations (if applicable)	(known releases, types of wastes and products managed, etc)
Intended use of excavated soil	❒ Off-site disposal ❒ Other *(describe below)* ❒ Backfill at original location ❒ Reuse at different location within CBU _____

Pre-Excavation Sampling Plan *(to be filled out by WE)*	
Number of samples required	
Locations and depths of soil samples (also see marked map)	
Excavation Requirements *(to be filled out by WE using sampling results)*	
Type of containers required	
Type of vapor controls required	
Type of labels required	

Soil Transfer Plan (decided by WE, WHC & Excavator)	❒ All excavated soils removed within 30 days* ❒ Container monitoring per E302
* If soils cannot be removed within 30 days, contact WE and WHC as soon as possible	
NOTE: If contamination that was not identified in the pre-assessment is encountered, IMMEDIATELY STOP THE EXCAVATION and notify WE, HSE and/or 501	

WHC = Waste Handling Contractor, WME = Waste & Maintenance Engineer

Attachment E
Excavation Log Form

Information Prepared by:	Date:
Excavator Contact Information	
Company Name:	
Contact Name:	
Street Address:	
City, State, ZIP:	Phone:
Project Information	
Project Name/Description	
Location of Excavation	_____
Date of Excavation	Start Date _____ End Date _____

Bin #	Size	Date/time filled	Date/time transferred to WHC	Label description *(Contact WHC with label questions)*	*(To be filled in by WHC)*	
					Lab report #	**Manifest #**
Database Tracking Updated ***(to be completed by WHC)***			❒ Yes ❒ No			

Soil Transfer Certification (if applicable)	I certify that all excavated soils from this project were removed and received by offsite facility within 30 days of the start of excavation. WHC Certification Signature: _____ Name (printed) _____ Date _____

WHC = Waste Handling Contractor, WME = Waste & Maintenance Engineer

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION
FOR THE *WATSON COGENERATION STEAM AND ELECTRICITY RELIABILITY PROJECT*

DOCKET NO. 09-AFC-1
PROOF OF SERVICE LIST
(Revised 5/4/11)

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INTERVENORS

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*indicates change

DECLARATION OF SERVICE

I, Cindy Kyle-Fischer, declare that on July 21, 2011, I served and filed copies of the attached *Responses to June 30, 2011 LARWQCB Response to CEC Request for Participation*, dated July 2011. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: **[www.energy.ca.gov/sitingcases/watson]**.

The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(*Check all that Apply*)

FOR SERVICE TO ALL OTHER PARTIES:

____ sent electronically to all email addresses on the Proof of Service list

_X__ by personal delivery or by depositing in the United States mail at Denver, Colorado with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

_X__sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (***preferred method***);

OR

____depositing in the mail an original and ___ paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 09-AFC-1
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

Cindy Kyle-Fischer