Appendix O - SWMU Information

WYNNEWOOD
REFINING COMPANY
A Gary-Williams Energy Corporation Subsidiary

August 15, 2000

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Hillary Young
Oklahoma Department of Environmental Quality
Waste Management Division
P. O. Box 1677
Oklahoma City, OK 73101-1677

Subject: RCRA Corrective Action, Permit No. 000396549

Dear Ms. Young:

Based on the RCRA correction action criteria for designating an Environmental Indicator (EI) RCRIS code, Wynnewood Refining Company (WRC) has achieved indicator codes CA725 (Current Human Exposures Under Control) and CA750 (Migration of Contaminated Groundwater Under Control).

With one exception (the northern leaded tank bottoms disposal area), WRC has completed correction action for all SWMUs identified at the facility that are subject to RCRA Corrective Action. The Oklahoma Department of Environmental Quality has agreed to defer any further RFI for the northern leaded tank bottoms disposal area until remediation of a free-product plume in proximity. However, since this area is contained within tank dikes under refinery security and has not shown EP toxicity levels of concern for lead, WRC does not consider this to be a hazard to the environment.

We have made substantial efforts to achieve our corrective action goals. Since the rationale is included in the many documents that have been provided to your office, we have only included references to these documents in this submittal. If you have any questions, please contact me at (405) 665-6655.

Sincerely,

Wynnewood Refining Company

Chris Hawley
Environmental Manager

Cc: Dave Roderick

P.O. Box 305 / 906 South Powell / Wynnewood, Oklahoma 73098 / (405) 665-6565

Documentation of Environmental Indicator Determination

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: WYNNEWOOD REFINING COMPANY
Facility Address: 906 S. POWELL, WYNNEWOOD, OK 73098
Facility EPA ID #: OKD 000 396 549

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

✓ If yes - check here and continue with #2 below.

____ If no - re-evaluate existing data, or

____ if data are not available skip to #6 and enter"IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be "**contaminated**"[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater		✓		
Air (indoors)[2]		✓		
Surface Soil (e.g., <2 ft)		✓		
Surface Water		✓		
Sediment		✓		
Subsurf. Soil (e.g., >2 ft)		✓		
Air (outdoors)		✓		

____ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

____ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

____ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s): INCLUDED IN:

LETTER 2/3/98, ODEQ TO WRC (ATTACHED)
LETTER 10/3/96, ODEQ TO WRC (ATTACHED)
LETTER 4/8/96, WRC TO ODEQ (ATTACHED)
RCRA FACILITY INVESTIGATIONS PHASE I, II, III (WRC & ODEQ FILES)
POSTCLOSURE MONITORING REPORTS FOR STORMWATER RETENTION POND (WRC & ODEQ FILES)
RCRA PART B PERMIT 000396549 (WRC & ODEQ FILES)
HYDROCARBON RECOVERY PROGRAM/REPORTS (WRC & ODEQ FILES)

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

	Potential **Human Receptors** (Under Current Conditions)						
"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	___	___	___	___			___
Air (indoors)	___	___	___				
Soil (surface, e.g., <2 ft)	___	___		___	___	___	___
Surface Water	___	___	___			___	___
Sediment	___	___			___	___	___
Soil (subsurface e.g., >2 ft)			___	___			___
Air (outdoors)	___	___		___	___	___	

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not " contaminated") as identified in #2 above.

2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential " Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

_____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

_____ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

_____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and Reference(s):_____

_____

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_____

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_____

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be " **significant**"[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially " unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE"

status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially " unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s): _____

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially " unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be " unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and
Reference(s):_____

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

✓ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the WYNNEWOOD REFINING COMPANY facility, EPA ID # OKD000396549, located at 906 S. POWELL, WYNNEWOOD, OK under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

____ NO - "Current Human Exposures" are NOT "Under Control."

____ IN - More information is needed to make a determination.

Completed by (signature) [signature] Date 8/15/00
(print) CHRIS HAWLEY
(title) ENVR. MANAGER

Supervisor (signature) _____ Date _____
(print) _____
(title) _____
(EPA Region or State) _____

Locations where References may be found:

WYNNEWOOD REFINING COMPANY
906 S. POWELL, P.O. BOX 305, WYNNEWOOD, OK 73098

OKLAHOMA DEPT. OF ENVIRONMENTAL QUALITY
707 N. ROBINSON, OKLAHOMA CITY, OK 73102

Contact telephone and e-mail numbers

(name) CHRIS HAWLEY
(phone #) 405-665-6655
(e-mail) chawley@GWEC.com

final Note: The Human Exposures EI is a Qualitative Screening of exposures and the determinations within this document should not be used as the sole basis for restricting the scope of more detailed (e.g., site-specific) assessments of risk.

Documentation of Environmental Indicator Determination

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: WYNNEWOOD REFINING COMPANY
Facility Address: 906 S. POWELL WYNNEWOOD, OK 73098
Facility EPA ID #: OKD 000 396 549

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   ✓ If yes - check here and continue with #2 below.

   ____ If no - re-evaluate existing data, or

   ____ if data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and

the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

___ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

✓ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not " contaminated."

___ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s): INCLUDED IN:

LETTER 2/3/98, ODEQ TO WRC (ATTACHED)
LETTER 10/3/96, ODEQ TO WRC (ATTACHED)
LETTER 4/8/96, WRC TO ODEQ (ATTACHED)
RCRA FACILITY INVESTIGATIONS PHASE I, II, III (WRC & ODEQ FILES)
POSTCLOSURE MONITORING REPORTS FOR SWRP (WRC & ODEQ FILES)
RCRA PART B PERMIT & APPLICATION 000396549 (WRC & ODEQ FILES)
HYDRO CARBON RECOVERY PROGRAM / REPORTS (WRC & ODEQ FILES)

Footnotes:

[1]"Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

_____ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2]).

_____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - skip to #8 and enter "NO" status code, after providing an explanation.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and
Reference(s):_____

[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of " contamination" that can and will be sampled/tested in the future to physically verify that all " contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

_____ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater " contamination" does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and
Reference(s):_____

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

_____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

_____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater " level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater " levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

_____ If unknown - enter "IN" status code in #8.

Rationale and
Reference(s):_____

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[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

_____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR
2) providing or referencing an interim-assessment,[5] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the

overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of "contaminated" groundwater can not be shown to be " **currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

_____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):_____

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[4] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[5] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

_____ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

_____ If no - enter "NO" status code in #8.

_____ If unknown - enter "IN" status code in #8.

Rationale and
Reference(s):_____

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

✓ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the WYNNEWOOD REFINING COMPANY

_____ facility , EPA ID # OKD 000396549, located at 906 S. POWELL, WYNNEWOOD, OK _____. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

_____ NO - Unacceptable migration of contaminated groundwater is observed or expected.

_____ IN - More information is needed to make a determination.

Completed by (signature) [signature] Date 8/15/00
(print) CHRIS HAWLEY
(title) _____

Supervisor (signature) _____ Date _____
(print) _____
(title) _____
(EPA Region or State) _____

Locations where References may be found:

WYNNEWOOD REFINING COMPANY
906 S. POWELL, P.O. BOX 305, WYNNEWOOD, OK 73098

OKLAHOMA DEPT. OF ENVIRONMENTAL QUALITY
707 N. ROBINSON, OKLAHOMA CITY, OK 73102

Contact telephone and e-mail numbers

(name) CHRIS HAWLEY
(phone #) 405-665-6655
(e-mail) chawley@GWEC.com

MARK S. COLEMAN
Executive Director

FRANK KEATING
Governor

State of Oklahoma
DEPARTMENT OF ENVIRONMENTAL QUALITY

January 26, 1998

David C. Roderick, Vice President, Refining
Wynnewood Refining Company
Post Office Box 305
Wynnewood, Oklahoma 73098

Re: Status of Solid Waste Management Units for RCRA Information System
EPA I.D. No. OKD000396549
Hazardous Waste Management Operations Permit No. 000396549

Dear Mr. Roderick:

In order to verify our files and to ensure that all information has been entered properly into the RCRA Information System (RCRIS), the Oklahoma Department of Environmental Quality has reviewed the corrective action status of each Solid Waste Management Unit (SWMU) at your facility. Below is a table of the SWMUs listing a brief summary of corrective action processes which have been implemented and the current corrective action determination at each SWMU.

SWMU	Corrective Action	Determination
Asphalt Pit 1	Removed under Corrective Measures Implementation (CMI)	Corrective Action (CA) completed
Asphalt Pit 2	Removed under CMI	CA completed
Asphalt Pit 3	Removed under CMI	CA completed
Biosludge Pit	No significant hazardous constituents found during RCRA Facility Investigation (RFI)	CA completed
Drainage Ditch	Removed as part of a closure	CA completed
Storm Water Retention Pond	Closed with RCRA final cover	Monitored under post-closure permit
Process Wastewater Drainage Ditch	No significant hazardous constituents found during the RFI; concrete lined	CA completed
Settling Lagoons	No significant releases to soils or ground water were found during the RFI	CA completed

Closed Landfill	No significant releases to soils or ground water were found during the RFI	CA completed
API Separator	No significant releases to soils or ground water were found during the RFI	CA completed
API Separator	No significant releases to soils or ground water were found during the RFI	CA completed
API Separator Sludge Pit	No significant releases to soils or ground water were found during the RFI	CA completed
Closed Oil Trap	No significant releases to soils or ground water were found during the RFI	CA completed
Asphalt Pit 4 / Southern Leaded Tank Bottoms Disposal Area	No significant releases to soils or ground water were found during the Phase II RFI	CA completed
Northern Leaded Tank Bottoms Disposal Area	Further RFI is required, but is deferred due to this SWMU's proximity to the free-product hydrocarbon plume. The RFI is deferred until the on-going remediation of this plume is completed.	RFI deferred.

All RCRIS entries will reflect the relevant corrective action information regarding each SWMU.

If you believe that any of the above information is incorrect, or if you have any questions regarding this letter, please contact Robert Replogle at (405) 271-7069.

Sincerely,

Donald D. Barrett

Donald D. Barrett, Chief Environmental Engineer
Waste Management Division

DDB/rr

WRC\RCRIS/980123

cc: Richard Thomas, EPA Region 6

MARK S. COLEMAN
Executive Director

FRANK KEATING
Governor

State of Oklahoma
DEPARTMENT OF ENVIRONMENTAL QUALITY

October 3, 1996

D.C. Roderick, Vice President Refining
Wynnewood Refining Company
Post Office Box 305
Wynnewood, OK 73098

Re: Phase III RCRA Facility Investigation (RFI) Findings Report for the Southern Leaded Tank Bottoms Disposal Area
EPA I.D. No. OKD000396549
RCRA Operations Permit No: 000396549

Dear Mr. Roderick:

The Waste Management Division (WMD) has completed a review of the Phase III RCRA Facility Investigation (RFI) Findings Report for the Southern Leaded Tank Bottoms Disposal Area which was submitted to this office by letter on July 24, 1996. The Findings Report appears to be consistent with the requirements of set forth in the approved Phase III Workplan, Section 3004 of the Hazardous and Solid Waste Amendments of 1984 (HSWA) and the HSWA provisions of your facility's RCRA operations permit.

Based upon the results of the Phase II and Phase III RFI for the Southern Leaded Tank Bottoms Disposal Area and subsequent telephone conversations between refinery staff and WMD staff during the past two months, no further work to characterize soil and groundwater, nor a corrective measures study is required for this SWMU area.

If you have any questions, please contact Robert Replogle of my staff at (405) 271-7069.

Sincerely,

H.A. Caves

H.A. Caves, Director
Waste Management Division

RECEIVED
OCT - 4 1996

HAC/rr

cc: Richard Thomas (6H-HS), EPA Region VI

Wynnewood Refining Company
A Gary-Williams Energy Corporation Subsidiary

April 8, 1996

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
P 142 029 755

Mr. H.A. Caves
Oklahoma Department of Environmental Quality
Waste Management Division
1000 N.E. 10th Street
Oklahoma City, OK 73117-1212

Re: Wynnewood Refining Company
RCRA Permit No. 000396549
Asphalt Pit 1 & 2 Remediation Report

Dear Mr. Caves:

Wynnewood Refining Company (WRC) submits for your review a copy of the Asphalt Pits 1 & 2 Remediation Report. This submittal details WRC's excavation, sampling and analytical procedures used in the removal and disposition of Asphalt Pits 1 & 2. All activities were performed under the guidelines of the RCRA Corrective Measure Study/Corrective Measure Implementation (CMS/CMI) Plan submitted to the USEPA on January 17, 1994 and approved on April 29, 1994. WRC believes this report meets all the objectives for finalizing the RCRA CMS/CMI Plan.

If you have any questions, please contact me at 405/665-6622.

Sincerely,

WYNNEWOOD REFINING COMPANY

D.G. Prucha
Manager Environmental Engineering

Attachment

0359DGP.fea

cc: Mr. Robert Replogle (ODEQ-WMD) w/Attachment
JCH w/a
DCR wo/a
John Goodrich wo/a

10 East Cambridge Circle Dr. Suite 250
Kansas City, Kansas 66103
Telephone: (913) 982-0457 Facsimile: (913) 905-0290
E-mail: saMcCormick@CVREnergy.com

June 23, 2014

Donald A Hensch, P.E.
Engineering Manager, RCRA Permits and Corrective Action
Land Protection Division
Oklahoma Department of Environmental Quality
707 N. Robinson
Oklahoma City, OK 73102

RE: Notification of Newly Identified Potential SWMU
Wynnewood Refining Company, LLC (RCRA Permit No. 000396549)
Wynnewood, Oklahoma

Dear Mr. Hensch:

Wynnewood Refining Company, LLC (WRC) is submitting this written notification of the discovery of a newly identified potential Solid Waste Management Unit (SWMU). In accordance with Section VII.D.1 or our RCRA permit (No. 000396549), this notification is being made within 30 days after the discovery. This letter contains a summary of our investigation of the SWMU and, to the extent available, the information required in Section VII.D.

On May 28, 2014, buried drums were encountered during exploratory work for a new building east of the asphalt control building (Zone 4 Operators Shelter). Following identification of drums in the initial exploratory borings, several more borings were installed in order to delineate a potential SWMU. A total of 28 borings were installed to approximately 3-7 feet bgs, depending on the contents identified. Borings 1 through 22 were installed with a 12-inch diameter solid flight auger and 23 through 28 were installed using a hydro-excavator due to nearby subsurface utilities. The contents within each boring were cataloged for mapping purposes and screened using a photoionization detector (PID) to identify the best locations for confirmation sampling. The location figures and field notes (Enclosure 1) are enclosed.

Evidence of crushed drums, cans, buckets, lumber, and other miscellaneous debris were found in 14 of the 28 borings (see Figure 3). Asphalt and tar (presumably from the long history of asphalt storage and transfer operations in this area) were present in 20 of 28 borings. PID screening was conducted after the borings were installed, using a handheld Photovac 2020 ComboPro. The screening was conducted by inserting an extension tube (approximately 0.5 feet) from the unit into each boring and holding the tube in place until a peak value was measured. The screening results were generally low, ranging from 0.9 to 9.4 ppm. A background value of 0.7 ppm was measured outside of the borings at the site location.

A total of three samples were collected. A waste characterization sample was collected from the tarry material found associated with one of the buried drums (ID: #1 Borehole). A composite sample from borings 4 and 10 (ID: #2 & #4 Composite) was collected at the level of the debris. A soil sample from boring 28 (ID: WWZone4 ChangeHouse28 (4.5-5)) was collected from the downgradient

periphery of the drum field to determine if there has been a release of any hazardous constituents from the drum disposal area. The first two samples were collected on May 29, 2014 and sent to Environmental Resource Technologies (ODEQ Certification No. 8304) for analysis of VOCs, SVOCs, and metals commonly associated with petroleum refining. The third sample was collected on June 3, 2014 and sent to Trinity Analytical Labs (ODEQ Certification No. 9313) for analysis of VOCs, SVOCs, metals, TPH-GRO and TPH-DRO. The final laboratory reports are enclosed (Enclosure 2).

The analytical results were compared to US EPA Regional Screening levels (RSLs) for industrial soil, updated May 2014. All of the analytes detected were below RSLs.

The information required by Section VII.D.1 of the permit is included in this notification as listed below:

- *a. The location of the newly-identified SWMU or potential AOC on the topographic map required under 40 CFR Section 270.14(b)(19). Indicate all existing units (in relation to other SWMUs);*
    - See the attached figures. Figure 1 provides a topographic map, Figure 2 provides a site map with existing SWMUs, and Figure 3 provides the location of the exploratory borings.
- *b. The type and function of the unit;*
    - The unit was used for drum and debris disposal.
- *c. The general dimensions, capacities, and structural description of the unit (supply any available drawings);*
    - The dimensions are approximately 50 x 15 feet (as shown on Figure 3), but the capacity is unknown. WRC surmises that no actual structure for this unit exists and the drums were simply buried in an earthen trench.
- *d. The period during which the unit was operated;*
    - The operational period is unknown. Based on the age of the tank that formerly occupied this location, the drums and debris were apparently buried at least 50 years ago.
- *e. The specifics, to the extent available, on all wastes that have been or are being managed at the SWMU or potential AOC;*
    - Observed from exploratory borings: drums, cans, buckets, lumber, miscellaneous metal and debris.
- *f. Results of any sampling and analysis required for the purpose of determining whether releases of hazardous waste including hazardous constituents have occurred, are occurring, or are likely to occur from the SWMU or whether the AOC should be considered a SWMU.*
    - The laboratory results are attached for reference.

Due to the presence of above and below ground product transfer lines and utilities in this area excavation of the drum field is considered impractical; therefore the potential SWMU has been left in place. Based on the limited aerial extent of the drums, the absence of any hazardous constituents in excess of RSLs, and its location within the active asphalt blending storage and transfer operational area of the refinery, WRC recommends that this SWMU be catalogued with the other SWMUs in Table VII-1 of the permit, with no further action at this time. If you need additional information or

have any questions, please feel free to contact me at 913-982-0457 or Jerome McSorley in our Oklahoma City office at 405-945-0090.

Sincerely,

Sam A. McCormick
Project Manager

SAM:jdm
K:\Coffeyville Resources\WRC\Correspondence\ODEQ Drum Notification June 2014\WRC_062314_Zone 4 Landfill_30 Day Notification.docx

Enclosures

cc/encl: Sidney Cabbiness – Wynnewood Refining Company, LLC
Evan Hilburn – Wynnewood Refining Company, LLC
Jerome McSorley – CVR Energy, Inc.
Christine Warford – WSP

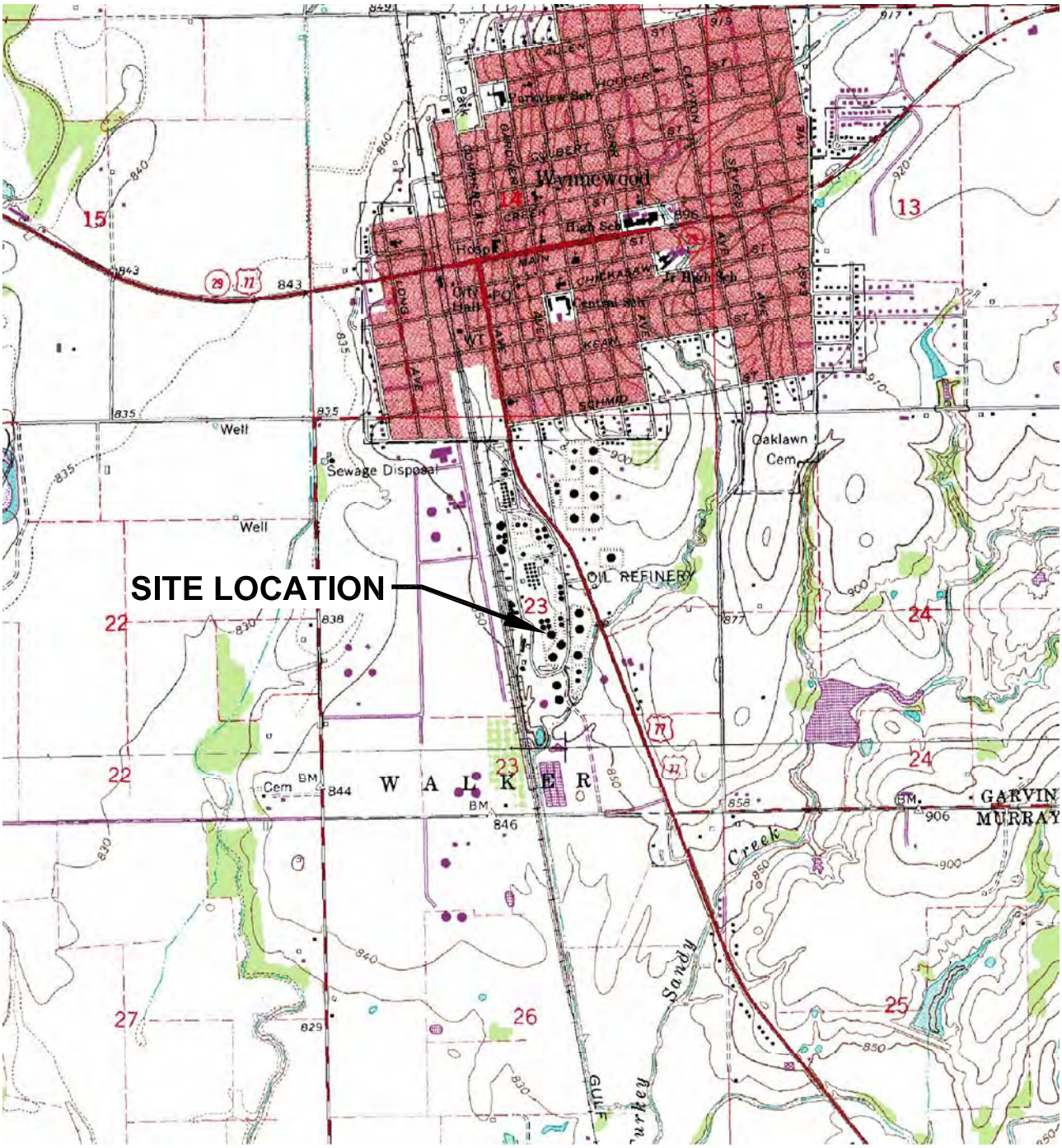
Figures

DWG Name: 00028249-121

Checked:

Approved:

Drawn By: LS 6/11/2014



REFERENCE
TOPOZONE.com Maps a la carte Inc.
Custom Map Created 03/06/05
Scale: 1:24,000
Associated USGS Maps: Pauls Valley

N

Quadrangle Location

0 2,000 4,000
SCALE IN FEET

WSP
WSP USA Corp.
123 North Third Street, Suite 507
Minneapolis, Minnesota 55401
(612) 343-0510
www.wspenvironmental.com/usa

Figure 1

SITE LOCATION

WYNNEWOOD REFINING COMPANY, LLC
WYNNEWOOD, OKLAHOMA
PREPARED FOR
WYNNEWOOD REFINING COMPANY, LLC
WYNNEWOOD, OKLAHOMA

R:\Acad\CADD\00028249_ WYNNEWOOD REFINING COMPANY\CAD\00028249-123.dwg 6/18/2014 9:55 AM Usls01166

N

0 600 1,200

SCALE IN FEET

WSP

WSP USA Corp.
123 North Third Street, Suite 507
Minneapolis, Minnesota 55401
(612) 343-0510
www.wspgroup.com/usa

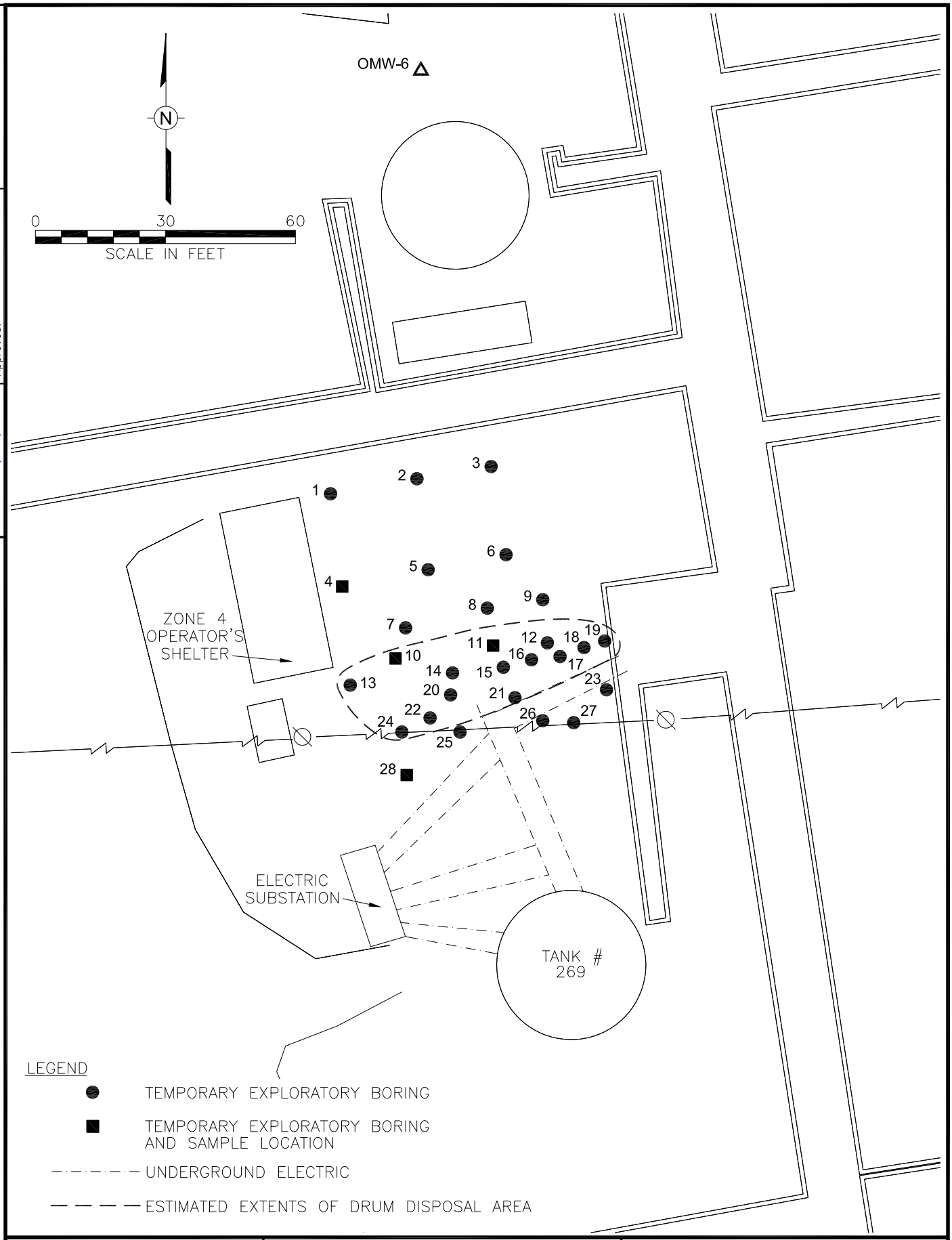
Figure 2

SITE MAP AND
SOIL WASTE MANAGEMENT UNITS (SWMUs)

WYNNEWOOD REFINING COMPANY, LLC
WYNNEWOOD, OKLAHOMA

PREPARED FOR
WYNNEWOOD REFINING COMPANY, LLC
WYNNEWOOD, OKLAHOMA

Drawn By: LS 6/18/2014
Checked:
Approved:
DWG Name: 00028249-123



DWG Name: 00028249-120

Checked:

Approved:

Drawn By: LS 6/18/2014

WSP

WSP USA Corp.
123 North Third Street, Suite 507
Minneapolis, Minnesota 55401
(612) 343-0510
www.wspgroup.com/usa

Figure 3

DRUM DISPOSAL AREA–
EXPLORATORY BORINGS

WYNNEWOOD REFINING COMPANY, LLC
WYNNEWOOD, OKLAHOMA

PREPARED FOR
WYNNEWOOD REFINING COMPANY, LLC
WYNNEWOOD, OKLAHOMA

Enclosure 1

DAILY LOG FORM

WYNNEWOOD REFINING
A CVR Energy, Inc. Company

Well(s) – Project/No. LANDFILL EAST OF SHELTER 04-1 Page 1 of 3
ASPHALT CONTROL ROOM CONSTRUCTION SITE

Site Location WRC - Wynnewood, OK

Prepared By JEROME MCSORLEY

Date/Time	Description of Activities
6-2-14/1420	CUR (SAM MCCORMICK, JEROME MCSORLEY) ONSITE
	TO MEET WRC AND REVIEW SUSPECTED LANDFILL
1515	LANDFILL REVIEWED AT 04-1 SHELTER. NOTED (EAST OF SHELTER)
	CANS/DRUMS/TAR AT ~4-6' BGS.
	- NEEDS FURTHER DELINEATION TO SOUTH
	* HYDROEXCAVATOR ON SCHEDULE FOR TODAY/TOMORROW
1650	RETURN TO LANDFILL LOCATION - THREE ADDITIONAL
	TEST HOLES PLACED IN SW AREA APPEAR TO
	BE CLEAR OF DEBRIS/TAR. ALL HOLES PLACED
	ABOUT 8' BGS BY HYDRO CHEM.
6-3-14/0830	CUR ONSITE. TO REVIEW LANDFILL AREA AND
	COLLECT CONFIRMATION SAMPLE. HYDRO CHEM ONSITE
	TO INSTALL ADDITIONAL BORINGS TO THE SOUTH.
0930	PID SCREEN (LISTED BY MAP LOCATION ID) BACKGROUND: 0.7 ppm
	1. 1.6 ppm 9. 3.0 ppm 17. 5.2 ppm 25. 5.4 ppm
	2. 0.9 ppm 10. 2.3 ppm 18. 8.9 ppm 26. 4.7 ppm
	3. 0.9 ppm 11. 6.9 ppm 19. 7.6 ppm 27. 5.6 ppm
	4. 1.8 ppm 12. 4.2 ppm 20. 9.4 ppm 28. 3.8 ppm
	5. 4.4 ppm 13. 0.8 ppm 21. 6.9 ppm
	6. 3.4 ppm 14. 4.1 ppm 22. 4.5 ppm
	7. 1.3 ppm 15. 7.1 ppm 23. 4.0 ppm
	8. 8.8 ppm 16. 4.8 ppm 24. 0.9 ppm

* PID: PHOTOVAC UNIT 2020 COMBO PRO

DAILY LOG FORM

WYNNEWOOD REFINING
A CVR Energy, Inc. Company

Well(s) _____ Project/No. LANDFILL Page 2 of 3

Site Location WRC - Wynnewood, OK

Prepared By JEROME MCSORLEY

Date/Time	Description of Activities
6-3-14 / 1000	BORING DETAILS (LISTED BY MAP NUMBER)
	1. 12" DIA. / 6' DEEP / SCRAP METAL
	2. 12" DIA / 6' DEEP / TAR SEEP @ 1' BGS
	3. 12" DIA / 6' DEEP / TAR SEEP @ 2' BGS
	4. 12" DIA. / 6' DEEP / TAR SEEP @ 2' BGS
	5. 12" DIA / 6' DEEP / TAR SEEP @ 2' BGS
	6. 12" DIA / 6' DEEP
	7. 12" DIA / 5' DEEP
	8. 12" DIA / 6' DEEP
	9. 12" DIA / 7' DEEP / TAR SEEP @ 2-3' BGS
	10. 12" DIA / 4' DEEP - TAR BOTTOM / TAR SEEP @ 2' BGS / METAL DEBRIS
	11. 12" DIA / 4' DEEP - TAR BOTTOM / METAL DEBRIS - DRUM TOP / SOIL HORIZON @ 1.5' BGS
	12 12" DIA / 3' DEEP / METAL DEBRIS - CANS
	13. 12" DIA / 5' DEEP & WATER w/ TAR / TAR SEEP @ 2' / METAL DEBRIS
	14. 12" DIA / 5' DEEP - WATER w/ TAR / TAR SEEP @ 2' / METAL - DRUM
	15. 12" DIA / 5' DEEP - TAR / METAL - DRUM / ROOT ZONE 0-2'
	16. 12" DIA / 4' DEEP - TAR / METAL - DRUM / ROOT ZONE 2.5'
	17. 12" DIA / 4' DEEP - TAR / METAL - DRUM CAN / ROOT ZONE 2'
	18. 12" DIA / 4' DEEP - TAR + WATER / METAL DEBRIS / ROOT ZOON @ 2'
	19. 12" DIA / 3' DEEP - TAR / METAL - DRUM / ROOT ZONE @ 2'
	20. 12" DIA / 5' DEEP - TAR / METAL - DRUM LUMBER /
	21. 12" DIA / 6.5' DEEP - TAR / METAL - DRUM / ROOT @ 3', TAR LAYER @ 3" BGS
	22. 12" DIA. / 5' DEEP - TAR / TAR LAYER @ 1' BGS
	23. 10" DIA / 4' DEEP - TAR SEEP AFTER INSTALL
	24. 10" DIA / 6' DEEP - SOLID BOTTOM / METAL DEBRIS - CAN / TAR SEEP @ 2' BGS @ 2' BGS

DAILY LOG FORM

WYNNEWOOD REFINING
A CVR Energy, Inc. Company

Well(s) — Project/No. LANDFILL (04-1) Page 3 of 3

Site Location WRC- WYNNEWOOD

Prepared By JEROME MCSORLEY

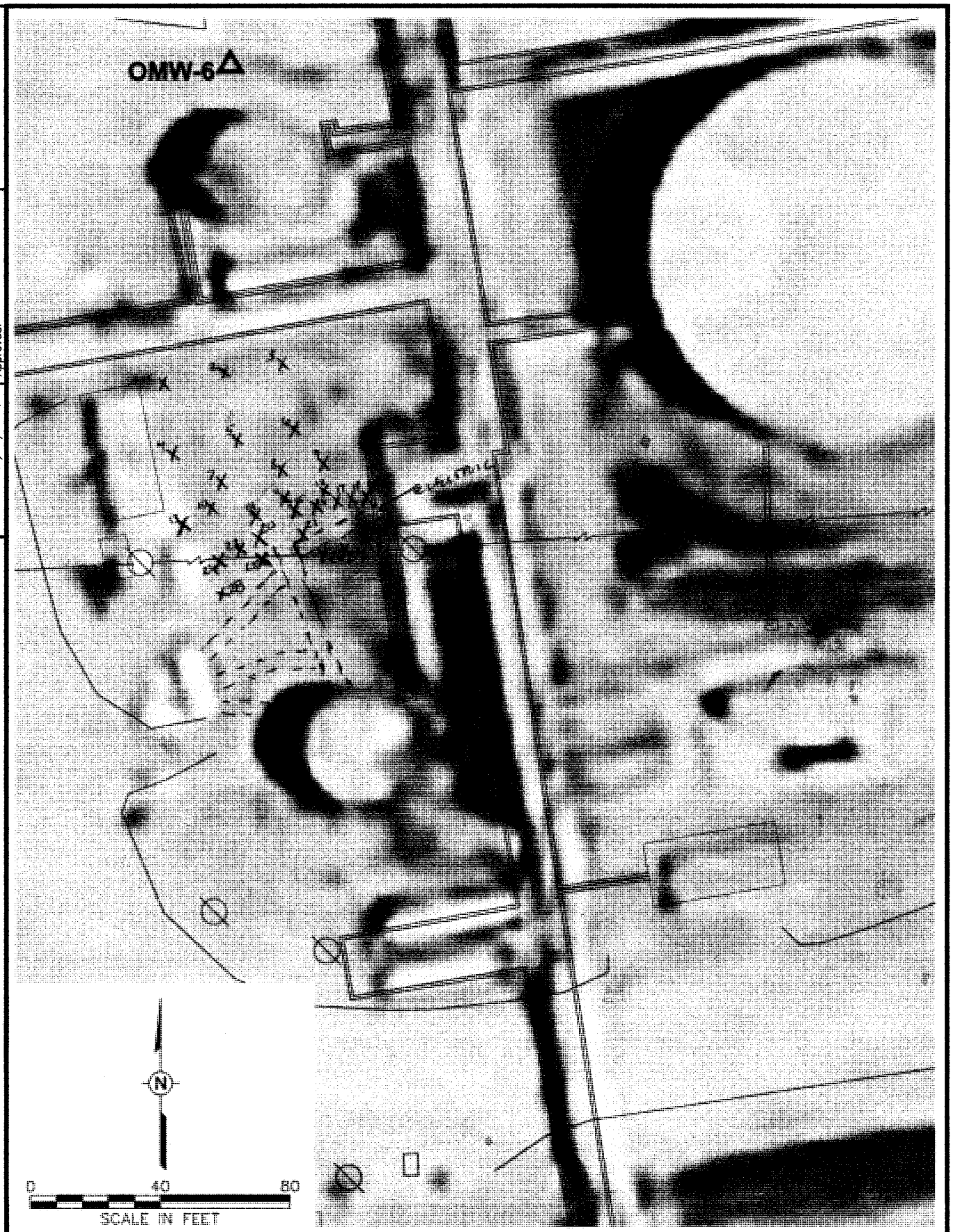
Date/Time	BORING DETAILS (CONT.) Description of Activities		
6-3-14	25. 10" DIA / 4' DEEP - SOLID BOTTOM	TAR LAYER @ 2' BGS	BURIED TRANSFER PIPE @ 3' BGS
	26. 10" DIA / 5' DEEP - SOLID BOTTOM	ROOT ZONE @ 2' BGS	ELECTRICAL CONDUIT @ 4' BGS
	27. 10" DIA / 5' DEEP - SOLID BOTTOM	TAR LAYER @ 0.5'	
	28. 10" DIA / 4.5' DEEP - SOLID BOTTOM	CONFIRMATION SAMPLE COLLECTED	
1400	SAMPLE COLLECTED		
	ID: WW ZONE 4 CHANGE HOUSE 28 (4.5-5)		
	MATRIX: SOIL @ 4.5-5' BGS		
	ANALYSIS: VOCs, SVOCs, METALS, OA-1, OA-2 (REW LIST)		
1430	SAMPLE PACKED ON ICE.		
1615	CVR MET W/ WRC MANAGER (BILL WELCHE) TO DISCUSS RESULTS.		
6-4-14 0700	CVR CURRIER SAMPLE TO TRINITY LABS		

DWG Name: ENLARGED AREA OMW-6

Checked:

Approved:

Drawn By: LS 6/2/2014



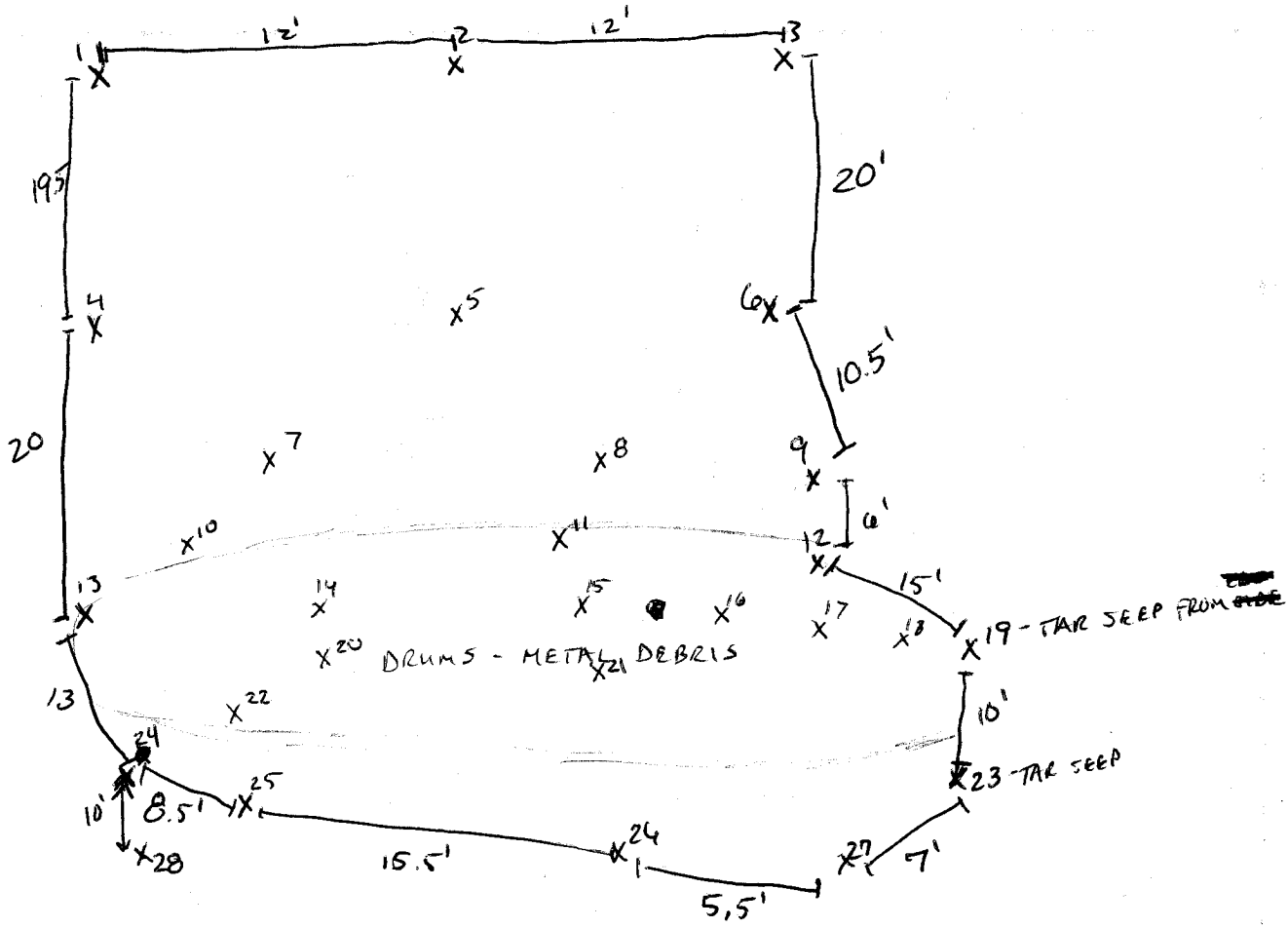
WSP
WSP USA Corp.
123 North Third Street, Suite 507
Minneapolis, Minnesota 55401
(612) 343-0510
www.wspgroup.com/usa

Figure

TEST HOLE LOCATIONS

WYNNEWOOD REFINING COMPANY, LLC
WYNNEWOOD, OKLAHOMA

PREPARED FOR
WYNNEWOOD REFINING COMPANY, LLC
WYNNEWOOD, OKLAHOMA



PERIMETER SKETCH

CHANGE ROOM BUILDING SIZE - 25' x 40'

Enclosure 2

ENVIRONMENTAL RESOURCE TECHNOLOGIES, LLC

EPA laboratory code: OK00921

Oklahoma DEQ Certification No. 8304 9915

Certificate of Analysis

Client Name: **Wynnewood Refining Co LLC**

Date Received: 05/30/14

Project:

Report Date: 06/06/14

ERT Lab Log #	Sample Identification	Date Sampled	Analysis Date	Time	Analyzed By	Parameter	Results	Units	Method
WW1405450	**#1 Borehole**	**05/29/14**	06/03/14	08:30	628	**Mercury**	**0.48**	mg/kg	7471
			06/02/14	10:51	603	**Antimony**	**<2.0**	mg/kg	6010B
			06/02/14	10:51	603	**Arsenic**	**2.6**	mg/kg	6010B
			06/02/14	10:51	603	**Barium**	**92**	mg/kg	6010B
			06/02/14	10:51	603	**Beryllium**	**0.24**	mg/kg	6010B
			06/02/14	10:51	603	**Cadmium**	**<0.50**	mg/kg	6010B
			06/02/14	10:51	603	**Chromium**	**11**	mg/kg	6010B
			06/02/14	10:51	603	**Cobalt**	**2.7**	mg/kg	6010B
			06/02/14	10:51	603	**Lead**	**23**	mg/kg	6010B
			06/02/14	10:51	603	**Nickel**	**15**	mg/kg	6010B
			06/02/14	10:51	603	**Selenium**	**2.3**	mg/kg	6010B
			06/02/14	10:51	603	**Vanadium**	**24**	mg/kg	6010B
			06/04/14	11:16	644	**Benzene**	**<0.25**	mg/kg	8260B
			06/04/14	11:16	644	**Carbon disulfide**	**<0.25**	mg/kg	8260B
			06/04/14	11:16	644	**Chlorobenzene**	**<0.25**	mg/kg	8260B
			06/04/14	11:16	644	**Chloroform**	**<1.2**	mg/kg	8260B
			06/04/14	11:16	644	**1,2-Dichloroethane**	**<0.25**	mg/kg	8260B
			06/04/14	11:16	644	**1,4-Dioxane**	**<25**	mg/kg	8260B
			06/04/14	11:16	644	**Ethylbenzene**	**<0.25**	mg/kg	8260B
			06/04/14	11:16	644	**1,2-Dibromoethane (Ethylene Dibromide)**	**<0.25**	mg/kg	8260B
			06/04/14	11:16	644	**2-Butanone (Methyl Ethyl Ketone)**	**<2.5**	mg/kg	8260B
			06/04/14	11:16	644	**Styrene**	**<0.25**	mg/kg	8260B
			06/04/14	11:16	644	**Toluene**	**<1.2**	mg/kg	8260B
			06/04/14	11:16	644	**Xylenes, Total**	**<0.75**	mg/kg	8260B
			06/04/14	00:44	280	**Anthracene**	**<3.3**	mg/kg	8270C
			06/04/14	00:44	280	**Benzo(a)anthracene**	**<3.3**	mg/kg	8270C
			06/04/14	00:44	280	**Benzo(b)fluoranthene**	**<3.3**	mg/kg	8270C
			06/04/14	00:44	280	**Benzo(k)fluoranthene**	**<3.3**	mg/kg	8270C
			06/04/14	00:44	280	**Benzo(a)pyrene**	**<3.3**	mg/kg	8270C
			06/04/14	00:44	280	**Bis(2-ethylhexyl)phthalate**	**<33**	mg/kg	8270C
			06/04/14	00:44	280	**Benzylbutyl phthalate**	**<33**	mg/kg	8270C
			06/04/14	00:44	280	**Chrysene**	**<3.3**	mg/kg	8270C
			06/04/14	00:44	280	**Dibenz(a,h)anthracene**	**<3.3**	mg/kg	8270C

NI* = Not identified in the tentatively identified compounds

Laboratory Authorized Signature

MDL = Method Detection Limit.

BDL = Analyte was analyzed for but not detected above MDL.

628,603,644,280= Subcontracted to ODEQ Lab #9915

131 Arlington St. Ada OK 74820

(580) 332-8808 Phone (580) 421-9110 Fax

ENVIRONMENTAL RESOURCE TECHNOLOGIES, LLC

EPA laboratory code: OK00921

Oklahoma DEQ Certification No. 8304 9915

Certificate of Analysis

Client Name: **Wynnewood Refining Co LLC**

Date Received: 05/30/14

Project:

Report Date: 06/06/14

ERT Lab Log #	Sample Identification	Date Sampled	Analysis Date	Time	Analyzed By	Parameter	Results	Units	Method
WW1405450	**#1 Borehole**	**05/29/14**	06/04/14	00:44	280	**1,2-Dichlorobenzene**	**<33**	mg/kg	8270C
			06/04/14	00:44	280	**1,3-Dichlorobenzene**	**<33**	mg/kg	8270C
			06/04/14	00:44	280	**1,4-Dichlorobenzene**	**<33**	mg/kg	8270C
			06/04/14	00:44	280	**Diethyl phthalate**	**<33**	mg/kg	8270C
			06/04/14	14:31	280	**Dimethylbenz (A) Anthracene**	**<33**	mg/kg	8270C
			06/04/14	00:44	280	**Dimethyl phthalate**	**<33**	mg/kg	8270C
			06/04/14	00:44	280	**Di-n-butyl phthalate**	**<33**	mg/kg	8270C
			06/04/14	00:44	280	**Di-n-octyl phthalate**	**<33**	mg/kg	8270C
			06/04/14	00:44	280	**Fluoranthene**	**<3.3**	mg/kg	8270C
			06/04/14	00:44	280	**1-Methylnaphthalene**	**<3.3**	mg/kg	8270C
			06/04/14	00:44	280	**Naphthalene**	**3.4**	mg/kg	8270C
			06/04/14	00:44	280	**Phenanthrene**	**<3.3**	mg/kg	8270C
			06/04/14	00:44	280	**Pyrene**	**<3.3**	mg/kg	8270C
			06/04/14	00:44	280	**Pyridine**	**<33**	mg/kg	8270C
			06/04/14	00:44	280	**2-Methylnaphthalene**	**<3.3**	mg/kg	8270C
			06/04/14	00:44	280	**2-Methylphenol (o-cresol)**	**<33**	mg/kg	8270C
			06/04/14	00:44	280	**3&4-Methyl Phenol (m,p-cresol)**	**<33**	mg/kg	8270C
			06/04/14	00:44	280	**2,4-Dimethylphenol**	**<33**	mg/kg	8270C
			06/04/14	00:44	280	**2,4-Dinitrophenol**	**<33**	mg/kg	8270C
			06/04/14	00:44	280	**4-Nitrophenol**	**<33**	mg/kg	8270C
			06/04/14	00:44	280	**Phenol**	**<33**	mg/kg	8270C
			06/04/14	-	9915	**Dibenz(a,h) acridine**	**NI***	mg/L	TIC
			06/04/14	-	9915	**Indene**	**NI***	mg/L	TIC
			06/04/14	-	9915	**Quinoline**	**NI***	mg/L	TIC
			06/04/14	-	9915	**Benzenethiol**	**NI***	mg/L	TIC

Laboratory Authorized Signature

MDL = Method Detection Limit.

BDL = Analyte was analyzed for but not detected above MDL.

628,603,644,280= Subcontracted to ODEQ Lab #9915

131 Arlington St. Ada OK 74820

(580) 332-8808 Phone (580) 421-9110 Fax

ENVIRONMENTAL RESOURCE TECHNOLOGIES, LLC

EPA laboratory code: OK00921

Oklahoma DEQ Certification No. 8304 9915

Quality Control Report

Client Name: **Wynnewood Refining Co LLC** Date Received: 05/30/14

Project: Report Date: 06/06/14

Date Sampled	Parameter	Method	MDL	Duplicate % Difference	BLANK	Spike Recovery	Standard % Recovery
05/29/14	**Mercury**	7471	0.02 mg/Kg	13.0	BDL	97.6	106
	Antimony	6010B	1 mg/Kg	NA	BDL	NA	65.0
	Arsenic	6010B	1 mg/Kg	2.00	BDL	93.9	103
	Barium	6010B	0.25 mg/Kg	1.00	BDL	119	104
	Beryllium	6010B	0.1 mg/Kg	NA	BDL	NA	102
	Cadmium	6010B	0.25 mg/Kg	4.00	BDL	98.5	96.0
	Chromium	6010B	0.5 mg/Kg	2.00	BDL	104	103
	Cobalt	6010B	0.5 mg/Kg	NA	BDL	NA	102
	Lead	6010B	0.25 mg/Kg	7.00	BDL	97.5	97.0
	Nickel	6010B	1 mg/Kg	NA	BDL	NA	102
	Selenium	6010B	1 mg/Kg	7.00	BDL	106	107
	Vanadium	6010B	0.5 mg/Kg	NA	BDL	NA	106
	Benzene	8260B	0.001 mg/Kg	2.26	BDL	78.8	101
	Carbon disulfide	8260B	0.001 mg/Kg	0.860	BDL	102	126
	Chlorobenzene	8260B	0.001 mg/Kg	5.07	BDL	79.9	93.8
	Chloroform	8260B	0.005 mg/Kg	2.14	BDL	73.4	94.9
	1,2-Dichloroethane	8260B	0.001 mg/Kg	2.65	BDL	69.8	93.2
	1,4-Dioxane	8260B	0.1 mg/Kg	NA	BDL	NA	NA
	Ethylbenzene	8260B	0.001 mg/Kg	3.77	BDL	84.0	95.1
	1,2-Dibromoethane (Ethylene Dibromide)	8260B	0.001 mg/Kg	2.58	BDL	81.2	97.4
	2-Butanone (MEK)	8260B	0.01 mg/Kg	5.02	BDL	88.4	109
	Styrene	8260B	0.001 mg/Kg	4.56	BDL	83.7	99.1
	Toluene	8260B	0.005 mg/Kg	2.18	BDL	80.6	98.7
	Xylenes, Total	8260B	0.003 mg/Kg	4.88	BDL	81.4	93.6
	Anthracene	8270C	0.033 mg/Kg	1.21	BDL	58.7	61.2
	Benzo(a)anthracene	8270C	0.033 mg/Kg	3.36	BDL	62.1	58.8
	Benzo(b)fluoranthene	8270C	0.033 mg/Kg	4.34	BDL	60.8	61.2
	Benzo(k)fluoranthene	8270C	0.033 mg/Kg	9.80	BDL	65.0	61.9
	Benzo(a)pyrene	8270C	0.033 mg/Kg	6.15	BDL	57.8	56.4
	Bis(2-ethylhexyl)phthalate	8270C	0.333 mg/Kg	3.37	BDL	58.9	58.5
	Benzylbutyl phthalate	8270C	0.333 mg/Kg	2.82	BDL	59.0	62.6
	Chrysene	8270C	0.033 mg/Kg	1.76	BDL	62.5	62.0
	Dibenz(a,h)anthracene	8270C	0.033 mg/Kg	5.32	BDL	65.0	61.8

Laboratory Authorized Signature

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*Performance of this Analyte is outside of established criteria.

131 Arlington St. Ada OK 74820

(580) 332-8808 Phone (580) 421-9110 Fax

ENVIRONMENTAL RESOURCE TECHNOLOGIES, LLC

EPA laboratory code: OK00921

Oklahoma DEQ Certification No. 8304 9915

Quality Control Report

Client Name: **Wynnewood Refining Co LLC** Date Received: 05/30/14

Project: Report Date: 06/06/14

Date Sampled	Parameter	Method	MDL	Duplicate % Difference	BLANK	Spike Recovery	Standard % Recovery
05/29/14	**1,2-Dichlorobenzene**	8270C	0.333 mg/Kg	3.12	BDL	55.5	50.9
	1,3-Dichlorobenzene	8270C	0.333 mg/Kg	1.16	BDL	53.2	50.0
	1,4-Dichlorobenzene	8270C	0.333 mg/Kg	0.140	BDL	51.9	49.6
	Diethyl phthalate	8270C	0.333 mg/Kg	1.78	BDL	63.4	66.6
	Dimethylbenz (A) Anthracene	8270C	0.33 mg/Kg	NA	BDL	NA	NA
	Dimethyl phthalate	8270C	0.333 mg/Kg	2.74	BDL	60.4	61.7
	Di-n-butyl phthalate	8270C	0.333 mg/Kg	2.11	BDL	54.4	61.5
	Di-n-octyl phthalate	8270C	0.333 mg/Kg	9.86	BDL	63.2	61.1
	Fluoranthene	8270C	0.033 mg/Kg	0.780	BDL	54.4	60.2
	1-Methylnaphthalene	8270C	0.033 mg/Kg	2.31	BDL	60.5	55.5
	Naphthalene	8270C	0.033 mg/Kg	3.53	BDL	52.3	47.7
	Phenanthrene	8270C	0.033 mg/Kg	1.10	BDL	66.9	60.8
	Pyrene	8270C	0.033 mg/Kg	0.420	BDL	57.0	57.5
	Pyridine	8270C	0.333 mg/Kg	13.8	BDL	14.3	29.6
	2-Methylnaphthalene	8270C	0.033 mg/Kg	0.500	BDL	55.1	51.3
	2-Methylphenol (o-cresol)	8270C	0.333 mg/Kg	3.62	BDL	63.6	57.3
	3&4-Methyl Phenol (m,p-cresol)	8270C	0.333 mg/Kg	1.41	BDL	79.6	70.2
	2,4-Dimethylphenol	8270C	0.333 mg/Kg	0.230	BDL	68.0	56.8
	2,4-Dinitrophenol	8270C	0.333 mg/Kg	10.8	BDL	56.2	36.0
	4-Nitrophenol	8270C	0.333 mg/Kg	6.16	BDL	59.6	58.9
	Phenol	8270C	0.333 mg/Kg	3.80	BDL	71.8	63.7

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ENVIRONMENTAL RESOURCE TECHNOLOGIES, LLC

EPA laboratory code: OK00921

Oklahoma DEQ Certification No. 8304 9915

Certificate of Analysis

Client Name: **Wynnewood Refining Co LLC** Date Received: 05/30/14

Project: Report Date: 06/06/14

ERT Lab Log #	Sample Identification	Date Sampled	Analysis Date	Time	Analyzed By	Parameter	Results	Units	Method
WW1405451	**#2 & #4 Composite**	**05/29/14**	06/03/14	08:30	628	**Mercury**	**0.21**	mg/kg	7471
			06/02/14	10:51	603	**Antimony**	**<2.0**	mg/kg	6010B
			06/02/14	10:51	603	**Arsenic**	**<2.0**	mg/kg	6010B
			06/02/14	10:51	603	**Barium**	**100**	mg/kg	6010B
			06/02/14	10:51	603	**Beryllium**	**0.55**	mg/kg	6010B
			06/02/14	10:51	603	**Cadmium**	**<0.50**	mg/kg	6010B
			06/02/14	10:51	603	**Chromium**	**13**	mg/kg	6010B
			06/02/14	10:51	603	**Cobalt**	**3.6**	mg/kg	6010B
			06/02/14	10:51	603	**Lead**	**8**	mg/kg	6010B
			06/02/14	10:51	603	**Nickel**	**8.5**	mg/kg	6010B
			06/02/14	10:51	603	**Selenium**	**<2.0**	mg/kg	6010B
			06/02/14	10:51	603	**Vanadium**	**25**	mg/kg	6010B
			06/03/14	13:07	644	**Benzene**	**0.34**	mg/kg	8260B
			06/03/14	13:07	644	**Carbon disulfide**	**<0.025**	mg/kg	8260B
			06/03/14	13:07	644	**Chlorobenzene**	**<0.025**	mg/kg	8260B
			06/03/14	13:07	644	**Chloroform**	**<0.12**	mg/kg	8260B
			06/03/14	13:07	644	**1,2-Dichloroethane**	**<0.025**	mg/kg	8260B
			06/03/14	13:07	644	**1,4-Dioxane**	**<2.5**	mg/kg	8260B
			06/03/14	13:07	644	**Ethylbenzene**	**0.11**	mg/kg	8260B
			06/03/14	13:07	644	**1,2-Dibromoethane (Ethylene Dibromide)**	**<0.025**	mg/kg	8260B
			06/03/14	13:07	644	**2-Butanone (Methyl Ethyl Ketone)**	**<0.25**	mg/kg	8260B
			06/03/14	13:07	644	**Styrene**	**<0.025**	mg/kg	8260B
			06/03/14	13:07	644	**Toluene**	**<0.12**	mg/kg	8260B
			06/03/14	13:07	644	**Xylenes, Total**	**0.17**	mg/kg	8260B
			06/04/14	00:44	280	**Anthracene**	**<0.66**	mg/kg	8270C
			06/04/14	00:44	280	**Benzo(a)anthracene**	**<0.66**	mg/kg	8270C
			06/04/14	00:44	280	**Benzo(b)fluoranthene**	**<0.66**	mg/kg	8270C
			06/04/14	00:44	280	**Benzo(k)fluoranthene**	**<0.66**	mg/kg	8270C
			06/04/14	00:44	280	**Benzo(a)pyrene**	**<0.66**	mg/kg	8270C
			06/04/14	00:44	280	**Bis(2-ethylhexyl)phthalate**	**<6.7**	mg/kg	8270C
			06/04/14	00:44	280	**Benzylbutyl phthalate**	**<6.7**	mg/kg	8270C
			06/04/14	00:44	280	**Chrysene**	**<0.66**	mg/kg	8270C
			06/04/14	00:44	280	**Dibenz(a,h)anthracene**	**<0.66**	mg/kg	8270C

NI* = Not identified in the tentatively identified compounds

Laboratory Authorized Signature

MDL = Method Detection Limit.

BDL = Analyte was analyzed for but not detected above MDL.

628,603,644,280= Subcontracted to ODEQ Lab #9915

131 Arlington St. Ada OK 74820

(580) 332-8808 Phone (580) 421-9110 Fax

ENVIRONMENTAL RESOURCE TECHNOLOGIES, LLC

EPA laboratory code: OK00921

Oklahoma DEQ Certification No. 8304 9915

Certificate of Analysis

Client Name: **Wynnewood Refining Co LLC** Date Received: 05/30/14

Project: Report Date: 06/06/14

ERT Lab Log #	Sample Identification	Date Sampled	Analysis Date	Analyzed Time	Analyzed By	Parameter	Results	Units	Method
WW1405451	**#2 & #4 Composite**	**05/29/14**	06/04/14	00:44	280	**1,2-Dichlorobenzene**	**<6.7**	mg/kg	8270C
			06/04/14	00:44	280	**1,3-Dichlorobenzene**	**<6.7**	mg/kg	8270C
			06/04/14	00:44	280	**1,4-Dichlorobenzene**	**<6.7**	mg/kg	8270C
			06/04/14	00:44	280	**Diethyl phthalate**	**<6.7**	mg/kg	8270C
			06/04/14	14:31	280	**Dimethylbenz (A) Anthracene**	**<6.7**	mg/kg	8270C
			06/04/14	00:44	280	**Dimethyl phthalate**	**<6.7**	mg/kg	8270C
			06/04/14	00:44	280	**Di-n-butyl phthalate**	**<6.7**	mg/kg	8270C
			06/04/14	00:44	280	**Di-n-octyl phthalate**	**<6.7**	mg/kg	8270C
			06/04/14	00:44	280	**Fluoranthene**	**<0.66**	mg/kg	8270C
			06/04/14	00:44	280	**1-Methylnaphthalene**	**0.99**	mg/kg	8270C
			06/04/14	00:44	280	**Naphthalene**	**<0.66**	mg/kg	8270C
			06/04/14	00:44	280	**Phenanthrene**	**<0.66**	mg/kg	8270C
			06/04/14	00:44	280	**Pyrene**	**<0.66**	mg/kg	8270C
			06/04/14	00:44	280	**Pyridine**	**<6.7**	mg/kg	8270C
			06/04/14	00:44	280	**2-Methylnaphthalene**	**1.2**	mg/kg	8270C
			06/04/14	00:44	280	**2-Methylphenol (o-cresol)**	**<6.7**	mg/kg	8270C
			06/04/14	00:44	280	**3&4-Methyl Phenol (m,p-cresol)**	**<6.7**	mg/kg	8270C
			06/04/14	00:44	280	**2,4-Dimethylphenol**	**<6.7**	mg/kg	8270C
			06/04/14	00:44	280	**2,4-Dinitrophenol**	**<6.7**	mg/kg	8270C
			06/04/14	00:44	280	**4-Nitrophenol**	**<6.7**	mg/kg	8270C
			06/04/14	00:44	280	**Phenol**	**<6.7**	mg/kg	8270C
			06/04/14	-	9915	**Dibenz(a,h) acridine**	**NI***	mg/L	TIC
			06/04/14	-	9915	**Indene**	**NI***	mg/L	TIC
			06/04/14	-	9915	**Quinoline**	**NI***	mg/L	TIC
			06/04/14	-	9915	**Benzenethiol**	**NI***	mg/L	TIC

NI* = Not identified in the tentatively identified compounds

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628,603,644,280= Subcontracted to ODEQ Lab #9915

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ENVIRONMENTAL RESOURCE TECHNOLOGIES, LLC

EPA laboratory code: OK00921

Oklahoma DEQ Certification No. 8304 9915

Quality Control Report

Client Name: **Wynnewood Refining Co LLC**

Date Received: 05/30/14

Project:

Report Date: 06/06/14

Date Sampled	Parameter	Method	MDL	Duplicate % Difference	BLANK	Spike Recovery	Standard % Recovery
05/29/14	**Mercury**	7471	0.02 mg/Kg	13.0	BDL	97.6	106
	Antimony	6010B	1 mg/Kg	NA	BDL	NA	65.0
	Arsenic	6010B	1 mg/Kg	2.00	BDL	93.9	103
	Barium	6010B	0.25 mg/Kg	1.00	BDL	119	104
	Beryllium	6010B	0.1 mg/Kg	NA	BDL	NA	102
	Cadmium	6010B	0.25 mg/Kg	4.00	BDL	98.5	96.0
	Chromium	6010B	0.5 mg/Kg	2.00	BDL	104	103
	Cobalt	6010B	0.5 mg/Kg	NA	BDL	NA	102
	Lead	6010B	0.25 mg/Kg	7.00	BDL	97.5	97.0
	Nickel	6010B	1 mg/Kg	NA	BDL	NA	102
	Selenium	6010B	1 mg/Kg	7.00	BDL	106	107
	Vanadium	6010B	0.5 mg/Kg	NA	BDL	NA	106
	Benzene	8260B	0.001 mg/Kg	6.550	BDL	103	93.5
	Carbon disulfide	8260B	0.001 mg/Kg	7.09	BDL	109	96.7
	Chlorobenzene	8260B	0.001 mg/Kg	5.28	BDL	97.4	97.2
	Chloroform	8260B	0.005 mg/Kg	7.32	BDL	106	96.1
	1,2-Dichloroethane	8260B	0.001 mg/Kg	7.17	BDL	103	95.0
	1,4-Dioxane	8260B	0.1 mg/Kg	NA	BDL	NA	NA
	Ethylbenzene	8260B	0.001 mg/Kg	1.10	BDL	94.7	95.5
	1,2-Dibromoethane (Ethylene Dibromide)	8260B	0.001 mg/Kg	6.59	BDL	101	92.7
	2-Butanone (MEK)	8260B	0.01 mg/Kg	12.1	BDL	94.7	74.3
	Styrene	8260B	0.001 mg/Kg	3.6	BDL	92.6	97.2
	Toluene	8260B	0.005 mg/Kg	2.83	BDL	105	98.4
	Xylenes, Total	8260B	0.003 mg/Kg	1.00	BDL	91.1	92.9
	Anthracene	8270C	0.033 mg/Kg	1.21	BDL	58.7	61.2
	Benzo(a)anthracene	8270C	0.033 mg/Kg	3.36	BDL	62.1	58.8
	Benzo(b)fluoranthene	8270C	0.033 mg/Kg	4.34	BDL	60.8	61.2
	Benzo(k)fluoranthene	8270C	0.033 mg/Kg	9.80	BDL	65.0	61.9
	Benzo(a)pyrene	8270C	0.033 mg/Kg	6.15	BDL	57.8	56.4
	Bis(2-ethylhexyl)phthalate	8270C	0.333 mg/Kg	3.37	BDL	58.9	58.5
	Benzylbutyl phthalate	8270C	0.333 mg/Kg	2.82	BDL	59.0	62.6
	Chrysene	8270C	0.033 mg/Kg	1.76	BDL	62.5	62.0
	Dibenz(a,h)anthracene	8270C	0.033 mg/Kg	5.32	BDL	65.0	61.8

Laboratory Authorized Signature

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OUR LETTERS AND REPORTS APPLY ONLY TO THE SAMPLE TESTED AND/OR INSPECTED, AND ARE NOT INDICATIVE OF THE QUANITIES OF APPARENTLY IDENTICAL OR SIMILAR PRODUCTS. UNLESS NOTIFIED IN WRITING, SAMPLES ARE DISPOSED OF 15 DAYS AFTER THE SAMPLE IS REPORTED.

131 Arlington St. Ada OK 74820

(580) 332-8808 Phone (580) 421-9110 Fax

ENVIRONMENTAL RESOURCE TECHNOLOGIES, LLC

EPA laboratory code: OK00921

Oklahoma DEQ Certification No. 8304 9915

Quality Control Report

Client Name: **Wynnewood Refining Co LLC** Date Received: 05/30/14

Project: Report Date: 06/06/14

Date Sampled	Parameter	Method	MDL	Duplicate % Difference	BLANK	Spike Recovery	Standard % Recovery
05/29/14	**1,2-Dichlorobenzene**	8270C	0.333 mg/Kg	3.12	BDL	55.5	50.9
	1,3-Dichlorobenzene	8270C	0.333 mg/Kg	1.16	BDL	53.2	50.0
	1,4-Dichlorobenzene	8270C	0.333 mg/Kg	0.140	BDL	51.9	49.6
	Diethyl phthalate	8270C	0.333 mg/Kg	1.78	BDL	63.4	66.6
	Dimethylbenz (A) Anthracene	8270C	0.33 mg/Kg	NA	BDL	NA	NA
	Dimethyl phthalate	8270C	0.333 mg/Kg	2.74	BDL	60.4	61.7
	Di-n-butyl phthalate	8270C	0.333 mg/Kg	2.11	BDL	54.4	61.5
	Di-n-octyl phthalate	8270C	0.333 mg/Kg	9.86	BDL	63.2	61.1
	Fluoranthene	8270C	0.033 mg/Kg	0.780	BDL	54.4	60.2
	1-Methylnaphthalene	8270C	0.033 mg/Kg	2.31	BDL	60.5	55.5
	Naphthalene	8270C	0.033 mg/Kg	3.53	BDL	52.3	47.7
	Phenanthrene	8270C	0.033 mg/Kg	1.10	BDL	66.9	60.8
	Pyrene	8270C	0.033 mg/Kg	0.420	BDL	57.0	57.5
	Pyridine	8270C	0.333 mg/Kg	13.8	BDL	14.3	29.6
	2-Methylnaphthalene	8270C	0.033 mg/Kg	0.500	BDL	55.1	51.3
	2-Methylphenol (o-cresol)	8270C	0.333 mg/Kg	3.62	BDL	63.6	57.3
	3&4-Methyl Phenol (m,p-cresol)	8270C	0.333 mg/Kg	1.41	BDL	79.6	70.2
	2,4-Dimethylphenol	8270C	0.333 mg/Kg	0.230	BDL	68.0	56.8
	2,4-Dinitrophenol	8270C	0.333 mg/Kg	10.8	BDL	56.2	36.0
	4-Nitrophenol	8270C	0.333 mg/Kg	6.16	BDL	59.6	58.9
	Phenol	8270C	0.333 mg/Kg	3.80	BDL	71.8	63.7

Laboratory Authorized Signature

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(580) 332-8808 Phone (580) 421-9110 Fax

Environmental Resource Technologies

131 Arlington Ada, Oklahoma 74820
Phone (580) 332-8808 Fax (580) 421-9110

CHAIN OF CUSTODY

CLIENT NAME: Wynnewood Refining Company, LLC

PROJECT NAME:

Lab Log #	Date Sample Taken	Time Sample Taken	Matrix Water (W) Soil (S) Sludge (Sl) Other	GRAB	COMP	Client I.D. Sample Location	Temp C, F	No. of Container (p)=plastic (g)=glass	Size of Container 1L, 500mL, 250mL, etc.	Analysis Requested	Sample Presv.
WW1405450	05/29/14	3:40pm	S1	X		#1 borehole		1g	8oz	Skinner list Metals, Vol, semivol	cool
WW1405451	05/29/14	3:40pm	S		X	#2 & #4 composite		1g	8oz	Skinner list Metals, Vol, semi vol	cool

Comments: RUSH Email Results EHilburn@cvrenergy.com

Sampled By:	Date/Time: 3:40pm 05/29/14	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By: Don Wallis	Date/Time: 5-30-14 8:35
Relinquished to Lab By: Don Wallis	Date/Time: 5-30-14 13:00	Received at Lab By:	Date/Time: 5-30-14 1300

Report To:	Send Invoice To:
Sidney Cabbiness/Bambi White	Wynnewood Refining Accounts Payable
Address	Address:
P.O. Box 305	P.O. Box 305
Wynnewood, OK 73098	Wynnewood, OK 73098
Phone/Fax Number: 405-665-6601(Sidney) 405-665-6543(Bambi)	Phone/Fax Number: 405-665-6602

115 East Fifth Street
Mound Valley, Kansas 67354
620-328-3222 (phone)
620-328-2033 (facsimile)
www.e-trinitylabs.com

13 June 2014

Sam McCormick
Coffeyville Resources Refining & Marketing, LLC
10 E. Cambridge Circle Suite 250
Kansas City, KS 66103

Subject: REW Analytical; Work Order No: 4060415

Under this cover, TRINITY ANALYTICAL LABORATORIES, INC., is pleased to submit the analytical results for the sample(s) received by the laboratory on 06/04/14 10:45.

Laboratory analyses were performed utilizing methodologies published in the:

* Most recently promulgated update of EPA Publication SW-846, 3rd Edition;
* Title 40 - Part 136 of the Code of Federal Regulations;
* Applicable ASTM Methods; and/or,
* Standard Methods for the Examination of Water and Wastewater, 20th Ed.
* All analyses were performed on samples as received and calculated on a wet basis, unless otherwise noted on the analytical report.

All data contained in this package is intended to meet NELAC requirements. Any data that does not meet these requirements will be qualified. See specific analytical reports for details.

Field Sampling activities performed by Trinity were in accordance with Trinity SOP FS-001, FS-002, or FS-003.

Unless other arrangements have been made, samples will be retained for thirty days from the date of receipt. Results tabulated within this report relate only to the item(s) tested or to the sample(s) as received by the Laboratory.

If you need assistance in evaluating the results of have questions concerning this package, please contact our Client Service Department at 620-328-3222. To expedite your request, please have your Work Order Number, listed in the "Subject:" section of this letter, readily available.

This report shall not be reproduced except in full, without the written approval of the Laboratory.

Thank you for choosing Trinity as your testing laboratory.

Sincerely,

TRINITY ANALYTICAL LABORATORIES, INC.

Scott A. Popejoy
Laboratory Manager

Prov. 3:5

115 East Fifth Street
Mound Valley, Kansas 67354
620-328-3222 (phone)
620-328-2033 (facsimile)
www.e-trinitylabs.com

Coffeyville Resources Refining & Marketing, LLC
10 E. Cambridge Circle Suite 250
Kansas City KS, 66103

Project: REW Analytical
Project Number: [none]
Project Manager: Sam McCormick

Reported:
06/13/14 09:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WW Zone 4 Change House 28 (4.5-5)	4060415-01	Solid	06/03/14 14:00	06/04/14 10:45

115 East Fifth Street
Mound Valley, Kansas 67354
620-328-3222 (phone)
620-328-2033 (facsimile)
www.e-trinitylabs.com

Coffeyville Resources Refining & Marketing, LLC
10 E. Cambridge Circle Suite 250
Kansas City KS, 66103

Project: REW Analytical
Project Number: [none]
Project Manager: Sam McCormick

Reported:
06/13/14 09:48

WW Zone 4 Change House 28 (4.5-5)
4060415-01 (Solid)

Analyte	Result	Quantitation Limit	Units	Analyst	Batch	Prepared	Analyzed	Method	Notes
Trinity Analytical Laboratories									
Extractable Petroleum Hydrocarbons by OA-2									
Mineral Spirits Range Organics	ND	10	mg/kg	sp	B4F1106	06/11/14	06/12/14	OA-2	
Kerosene Range Organics	ND	10	"	"	"	"	"	"	
Jet Fuel Range Organics	ND	10	"	"	"	"	"	"	
Diesel Fuel Range Organics	ND	10	"	"	"	"	"	"	
Fuel Oil #6 Range Organics	ND	10	"	"	"	"	"	"	
Mineral Oil Range Organics	ND	10	"	"	"	"	"	"	
Motor Oil Range Organics	ND	10	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*76.4 %*		*28-121*	"	"	"	"	
Volatile Petroleum Hydrocarbons by OA-1									
TVPH	**0.25**	0.10	mg/kg	jg	B4F0905	06/09/14	06/09/14	OA-1	
Surrogate: Bromofluorobenzene		*91.7 %*		*60-140*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*122 %*		*60-140*	"	"	"	"	
Surrogate: Toluene-d8		*106 %*		*60-140*	"	"	"	"	
Metals by EPA 6000/7000 Series Methods									
Antimony	**16.5**	5.00	mg/kg	cmc	B4F1011	06/10/14	06/11/14	EPA 6010B	
Arsenic	**2.38**	2.00	"	"	"	"	"	"	
Barium	**121**	1.00	"	"	"	"	"	"	
Beryllium	ND	1.00	"	"	"	"	"	"	
Cadmium	**1.12**	1.00	"	"	"	"	"	"	
Chromium	**17.7**	5.00	"	"	"	"	"	"	
Cobalt	ND	5.00	"	"	"	"	"	"	
Copper	**5.98**	5.00	"	"	"	"	"	"	
Lead	ND	5.00	"	"	"	"	"	"	
Nickel	**9.57**	5.00	"	"	"	"	"	"	
Selenium	ND	5.00	"	"	"	"	"	"	
Silver	ND	5.00	"	"	"	"	"	"	
Vanadium	**29.8**	5.00	"	"	"	"	"	"	
Zinc	**29.8**	5.00	"	"	"	"	"	"	

115 East Fifth Street
Mound Valley, Kansas 67354
620-328-3222 (phone)
620-328-2033 (facsimile)
www.e-trinitylabs.com

Coffeyville Resources Refining & Marketing, LLC	Project:	REW Analytical
10 E. Cambridge Circle Suite 250	Project Number:	[none]
Kansas City KS, 66103	Project Manager:	Sam McCormick

Reported:
06/13/14 09:48

WW Zone 4 Change House 28 (4.5-5)
4060415-01 (Solid)

Analyte	Result	Quantitation Limit	Units	Analyst	Batch	Prepared	Analyzed	Method	Notes
Trinity Analytical Laboratories									
Mercury by CVAA EPA 7000 Methods									
Mercury	ND	0.1000	mg/kg	cmc	B4F1104	06/11/14	06/11/14	EPA 7471	
Volatile Organic Compounds by EPA Method 8260B									
Benzene	ND	0.005	mg/kg	jg	B4F0905	06/09/14	06/09/14	EPA 8260B	
2-Butanone (MEK)	ND	0.050	"	"	"	"	"	"	
Carbon Tetrachloride	ND	0.005	"	"	"	"	"	"	
Carbon Disulfide	ND	0.005	"	"	"	"	"	"	
Chlorobenzene	ND	0.005	"	"	"	"	"	"	
Chloroform	ND	0.005	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.005	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.005	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.005	"	"	"	"	"	"	
1,4-Dioxane	ND	0.10	"	"	"	"	"	"	Z(1)
Ethylbenzene	ND	0.005	"	"	"	"	"	"	
Styrene	ND	0.005	"	"	"	"	"	"	
Tetrachloroethene	ND	0.005	"	"	"	"	"	"	
Toluene	ND	0.005	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.005	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.005	"	"	"	"	"	"	
Trichloroethene	ND	0.005	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.005	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.005	"	"	"	"	"	"	
m- & p-Xylene	ND	0.005	"	"	"	"	"	"	
o-Xylene	ND	0.005	"	"	"	"	"	"	
Surrogate: Bromofluorobenzene		*91.7 %*		*50-157*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*122 %*		*31-170*	"	"	"	"	
Surrogate: Toluene-d8		*106 %*		*60-140*	"	"	"	"	

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Coffeyville Resources Refining & Marketing, LLC
10 E. Cambridge Circle Suite 250
Kansas City KS, 66103

Project: REW Analytical
Project Number: [none]
Project Manager: Sam McCormick

Reported:
06/13/14 09:48

WW Zone 4 Change House 28 (4.5-5)
4060415-01 (Solid)

Analyte	Result	Quantitation Limit	Units	Analyst	Batch	Prepared	Analyzed	Method	Notes
Trinity Analytical Laboratories									
Semivolatile Organic Compounds by EPA Method 8270C									
Acenaphthene	ND	0.33	mg/kg	jrg	B4F0908	06/09/14	06/09/14	EPA 8270C	
Anthracene	ND	0.33	"	"	"	"	"	"	
Benz[a]anthracene	ND	0.33	"	"	"	"	"	"	
Benzo[a]Pyrene	ND	0.33	"	"	"	"	"	"	
Benzo[b]Fluoranthene	ND	0.33	"	"	"	"	"	"	
Benzo[k]Fluoranthene	ND	0.33	"	"	"	"	"	"	
Benzo[g,h,i]Perylene	ND	0.33	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	0.33	"	"	"	"	"	"	
Butyl Benzyl Phthalate	ND	0.33	"	"	"	"	"	"	
Chrysene	ND	0.33	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.33	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.33	"	"	"	"	"	"	
7,12-Dimethylbenz(a)anthracene	ND	1.6	"	"	"	"	"	"	Z(1)
2,4-Dimethylphenol	ND	0.33	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	0.33	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	0.33	"	"	"	"	"	"	
Di-n-octylphthalate	ND	0.33	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.33	"	"	"	"	"	"	
Fluoranthene	ND	0.33	"	"	"	"	"	"	
Fluorene	ND	0.33	"	"	"	"	"	"	
Indeno[1,2,3-cd]Pyrene	ND	0.33	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.33	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.33	"	"	"	"	"	"	
2-Methylphenol (o-cresol)	ND	0.33	"	"	"	"	"	"	
3-& 4-Methylphenol (m&p-Cresol)	ND	0.33	"	"	"	"	"	"	
Naphthalene	ND	0.33	"	"	"	"	"	"	
Nitrobenzene	ND	0.33	"	"	"	"	"	"	
Phenanthrene	ND	0.33	"	"	"	"	"	"	
Phenol	ND	0.33	"	"	"	"	"	"	
Pyrene	ND	0.33	"	"	"	"	"	"	
Pyridine	ND	0.33	"	"	"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*43.8 %*		*29-107*	"	"	"	"	
Surrogate: 2-Fluorophenol		*29.5 %*		*16-91*	"	"	"	"	
Surrogate: Nitrobenzene-d5		*37.0 %*		*17-108*	"	"	"	"	
Surrogate: Phenol-d6		*39.2 %*		*13-108*	"	"	"	"	
Surrogate: p-Terphenyl-d14		*55.3 %*		*34-128*	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*48.3 %*		*32-120*	"	"	"	"	

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Coffeyville Resources Refining & Marketing, LLC	Project:	REW Analytical
10 E. Cambridge Circle Suite 250	Project Number:	[none]
Kansas City KS, 66103	Project Manager:	Sam McCormick

Reported:
06/13/14 09:48

Notes and Definitions

Z(1)	Non Certified Analyte
X(g)	Recovery is outside of control limits.
M(c)	The Matrix spike and / or matrix spike duplicate analyte recovery was outside of QC Limits because of matrix interference.
M(b)	The Matrix spike and / or matrix spike duplicate analyte recovery was outside of QC Limits because of high analyte concentration.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

CHAIN OF CUSTODY

Trinity ANALYTICAL LABORATORIES INC

115 East 5th Street • Mound Valley, KS 67354 • 620-328-3222 • Fax 620-328-2033 • www.e-trinitylabs.com

SEND RESULTS TO:		SEND INVOICE TO:	
NAME	Sam McCormick TITLE	PURCHASE ORDER NO.	
COMPANY	CRRM	NAME	Sam McCormick
MAILING ADDRESS	10 E. Cambridge Circle Dr.	COMPANY	CRRM DEPT.
CITY/STATE/ZIP	Kansas City, Kansas	MAILING ADDRESS	10 E. Cambridge Circle Dr.
TELEPHONE NO	(918) 982-0457	CITY/STATE/ZIP	Kansas City, KS
FAX NO.		PROJECT NAME	Down South

TURN AROUND TIME REQUESTED (Additional Charges May Apply.)

Samples Must Be Received Before Noon or Turn Around Time Will Start the Next Business Day.

Business Day(s) ☒ 5 ☐ 3 ☐ 2 ☐ Next ☐ Same

Results: ☐ Mailed ☐ Faxed ☐ E-Mail Address

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION/DESCRIPTION -01	MATRIX TYPE	DATE SAMPLED	TIME SAMPLED	PRES.	NO. OF CONT.	VOA	SVOA	METALS	PCB	OIL & GREASE	BTEX	BOD	TSS	pH	AMMONIA	E. COLI	DEW list				REMARKS: (If Special Detection Limits or Analyte Lists are Required, Please Note Below.)
WW Zone 4 Change House 28845	S	6/3/14	1400	O	2												X				Dew list (VOA's SVOCs metals. OA-7 OA-2)

WO# 406 0415

SAMPLER (SIGNATURE)	RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME
		6-4-14	1045				
SHIPPED BY: HD-JM	RECEIVED FOR LABORATORY BY	DATE 6/4/14	TIME 1045	CONDITION OF SAMPLES AT RECEIPT	CUSTODY SEALS INTACT Y N N/A	COOLER TEMP. 1°C	

COMMENTS OR REMARKS:

pH Check ☐

ORIGINAL - LABORATORY COPY YELLOW - CUSTOMER COPY

INVOICE

Number: 4504-1406029
Date: 06/11/2014

115 East Fifth Street - P.O. Box C - Mound Valley, Kansas 67354 Phone: 620-328-3222 Fax: 620-328-2033

Coffeyville Resources Refining & Marketing,	
Accounts Payable	
P.O. Box 410420	
Kansas City	MO 64141-0420

Results Submitted To:	Coffeyville Resources Refining & Marketing,		
	Sam McCormick		
	10 E. Cambridge Circle Suite 250		
	Kansas City	KS	66103

Terms	P O Number	COC Number	Work Order (s)	Lab Contact
Net 30	KSR142545		4060415	Scott Popejoy

Description	Quantity	Unit Price	TAT Factor	Subtotal
Total Volatile Petroleum Hydrocarbons	1	$51.00	1.00	$51.00
Volatiles, Total Purgeable	1	$147.40	1.00	$147.40
Total Extractable Petroleum Hydrocarbons	1	$52.50	1.00	$52.50
Semi-Volatiles, Total Extractable	1	$226.80	1.00	$226.80
Met-ICP - CRRM-14	1	$119.10	1.00	$119.10
CVAA Mercury - Solid	1	$28.40	1.00	$28.40
			Invoice Total:	**$625.20**

Project: REW Analytical

SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

MARY FALLIN
Governor

July 23, 2014

Mr. Sam McCormick
Project Manager
Wynnewood Refining Company
10 East Cambridge Circle Drive, Suite 250
Kansas City, Kansas 66103

Re: Notification of Newly Identified Solid Waste Management Unit (SWMU), Wynnewood Refining Company, Wynnewood Oklahoma, Permit #000396549 (Permit)

Dear Mr. McCormick:

On June 25, 2014 the Land Protection Division of the Department of Environmental Quality (DEQ) received the above-referenced notification. The notification outlined that on May 28, 2014 buried drums were encountered during exploratory work for a new building east of the asphalt control building. A total of 28 borings were installed to approximately 3-7 feet below ground surface, with the contents within each boring catalogued for mapping purposes and screened using a photoionization detector to identify locations for confirmation sampling.

A total of three samples were collected and analyzed to determine if there had been a release of any hazardous constituents from the drum disposal area. All of the analytes detected were below EPA Regional Screening Levels.

Information required by permit (Section VII.D.1) was included in the notification. Permit condition VII.D.1.a requires the location of a newly-identified SMWU be placed on a topographic map required under 40 CFR Section 270.14(b)(19), and to indicate all existing units in relation to other SWMUs.

The notification attempted to meet these requirements by including three figures: a topographic map (Figure 1), a site map with existing SWMUs (Figure 2), and the location of the exploratory borings (Figure 3). However, Figure 1 is at too great of a scale (1 inch to 2,000 feet) to be of much use.

The DEQ requests that a new topographic map that is the same size and scale as Figure 2 (1 inch to 600 feet) be submitted. A topographic map of that size and scale would more adequately meet the requirements of 40 CFR Section 270.14(b)(19).

Upon receipt of the requested topographic map the new SWMU will be catalogued with the existing SMUWs in Table VII-1 of the permit.

Questions may be directed to Adrian Simmons at (405) 702-5217.

Sincerely,

Donald A. Hensch, P.E.
Engineering Manager
RCRA Permits and Corrective Actions Section
Land Protection Division

DAH/as

cc: David Vogler (6PD-O), EPA Region 6

10 East Cambridge Circle Dr. Suite 250
Kansas City, Kansas 66103
Telephone: (913) 982-0457 Facsimile: (913) 905-0290
E-mail: saMcCormick@CVREnergy.com

July 31, 2014

Donald A. Hensch, P.E.
Engineering Manager, RCRA Permits and Corrective Action
Land Protection Division
Oklahoma Department of Environmental Quality
707 N. Robinson
Oklahoma City, OK 73102

RE: Notification of Newly Identified Potential SWMU – Response to Comments
Wynnewood Refining Company, LLC (RCRA Permit No. 000396549)
Wynnewood, Oklahoma

Dear Mr. Hensch:

On July 23, 2014, in response to the notification of a newly identified Solid Waste Management Unit (SWMU), the Oklahoma Department of Environmental Quality (ODEQ) requested a new topographic map. Two new maps showing site topography are attached as follows:

- Figure 1b: Site Map with Topography
- Figure 1c: Site Map with Topography and Aerial View

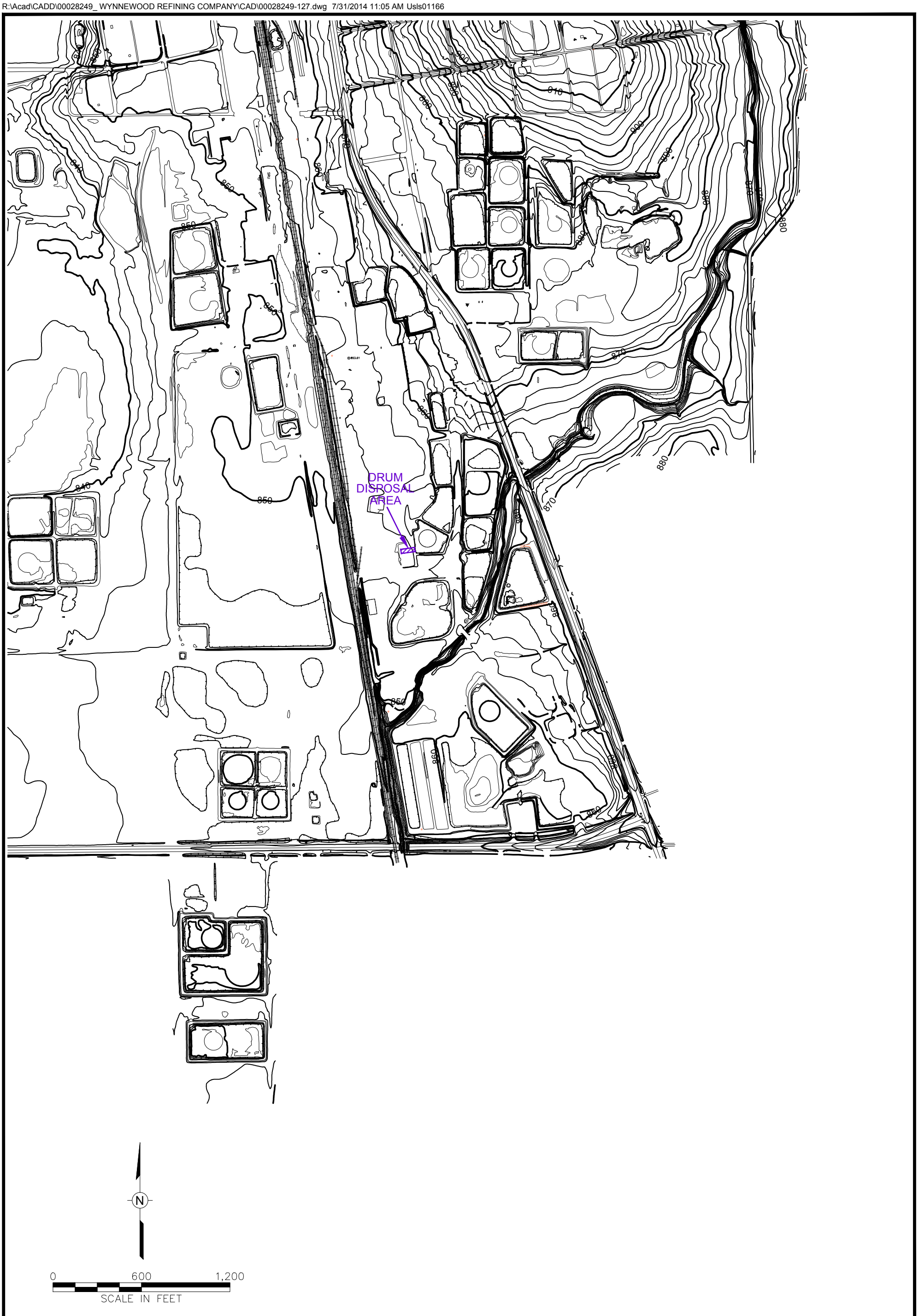
In order to complete the SWMU notification, please add the figure to the notification that was dated June 23, 2014. If you need additional information or have any questions, please feel free to contact me at 913-982-0457 or Jerome McSorley in our Oklahoma City office at 405-945-0090.

Sincerely,

Sam A. McCormick
Project Manager

SAM:jdm
C:\Users\jdmcsorley\Desktop\Projects\WRC\Project Management\Correspondence_Meetings\ODEQ\ODEQ Comments Sept 2013\WRC_072914_response to comments_draft.doc
Enclosure
cc/encl: Jerome McSorley – CVR Energy, Inc.
Sidney Cabbiness – Wynnewood Refining Company, LLC
Evan Hilburn – Wynnewood Refining Company, LLC
Christine Warford – WSP USA Corp.

R:\Acad\CADD\00028249_ WYNNEWOOD REFINING COMPANY\CAD\00028249-127.dwg 7/31/2014 11:05 AM Usls01166



WSP

WSP USA Corp.
123 North Third Street, Suite 507
Minneapolis, Minnesota 55401
(612) 343-0510
www.wspgroup.com/usa

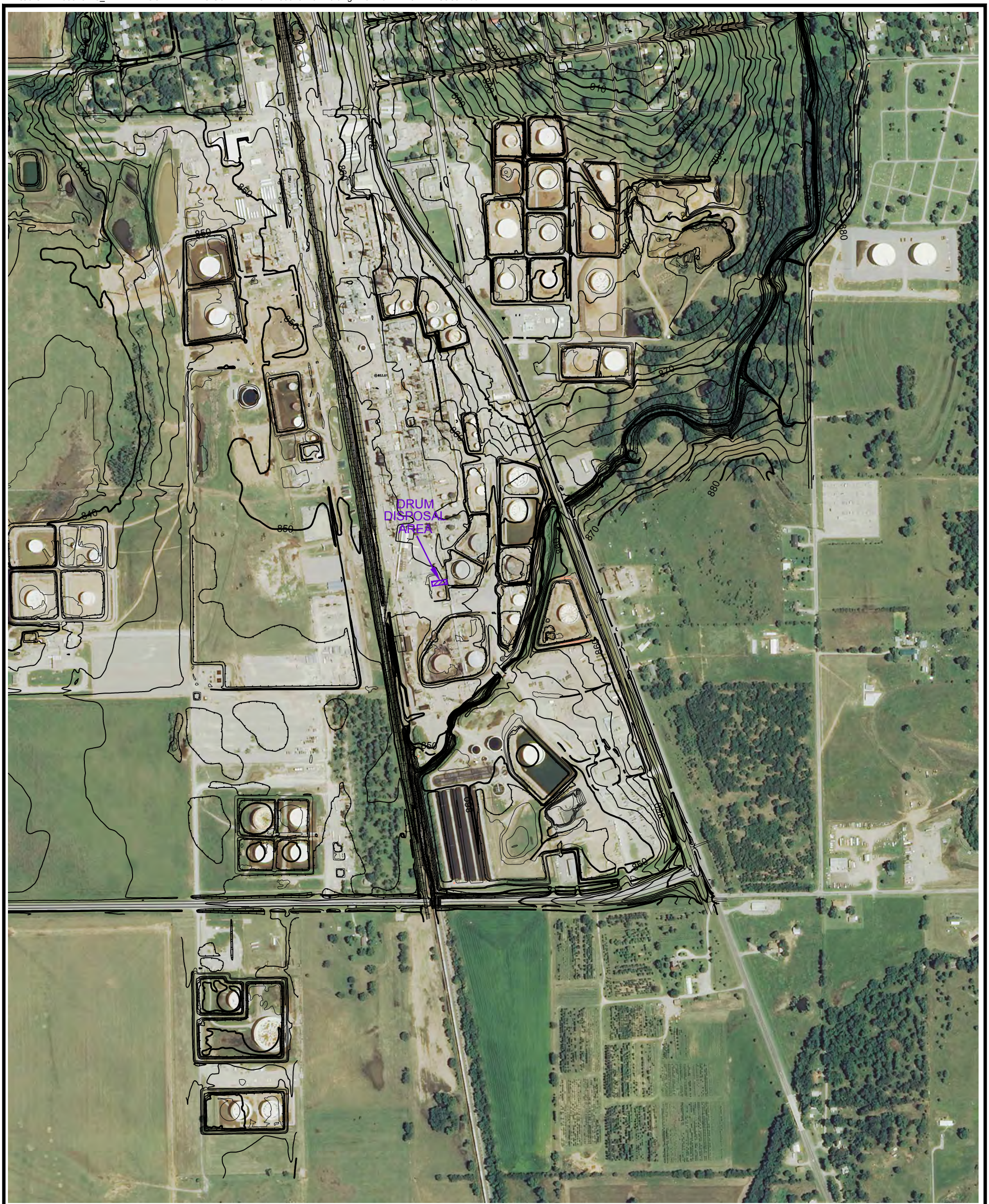
Figure 1B

SITE MAP WITH TOPOGRAPHY

WYNNEWOOD REFINING COMPANY, LLC
WYNNEWOOD, OKLAHOMA

PREPARED FOR
WYNNEWOOD REFINING COMPANY, LLC
WYNNEWOOD, OKLAHOMA

Drawn By: LS 7/31/2014
Checked:
Approved:
DWG Name: 00028249-127



WSP USA Corp.
123 North Third Street, Suite 507
Minneapolis, Minnesota 55401
(612) 343-0510
www.wspgroup.com/usa

Figure 1C

SITE MAP WITH TOPOGRAPHY
AND AERIAL VIEW

WYNNEWOOD REFINING COMPANY, LLC
WYNNEWOOD, OKLAHOMA

PREPARED FOR
WYNNEWOOD REFINING COMPANY, LLC
WYNNEWOOD, OKLAHOMA

Drawn By: LS 7/31/2014
Checked:
Approved:
DWG Name: 00028249-126

SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

MARY FALLIN
Governor

August 6, 2014

Mr. Sam McCormick
Project Manager
Wynnewood Refining Company
10 East Cambridge Circle Drive, Suite 250
Kansas City, Kansas 66103

Re: Supplemental Information Regarding Notification of Newly Identified Solid Waste Management Unit (SWMU), Wynnewood Refining Company, Wynnewood Oklahoma, Permit #000396549 (Permit), EPA ID#OKD000396549

Dear Mr. McCormick:

On June 25, 2014 the Land Protection Division of the Department of Environmental Quality (DEQ) received a notification of a newly identified SWMU at the Wynnewood Refining Company. On July 23, 2014 the DEQ requested submission of additional topographic maps the same size and scale as Figure 2 (1 inch to 600 feet). Two new maps were submitted July 31, 2014.

With the receipt of the new maps (Figures 1B and 1C) information required by permit (Section VII.D.1) has been adequately addressed.

The new SWMU will be catalogued with the existing SMUWs in Table VII-1 of the permit.

Questions may be directed to Adrian Simmons at (405) 702-5217.

Sincerely,

For Donald A. Hensch, P.E.
Engineering Manager
RCRA Permits and Corrective Actions Section
Land Protection Division

DAH/as

cc: David Vogler (6PD-O), EPA Region 6