



FACTSHEET
(pursuant to NAC 445A.236)

Permittee Name: REPUBLIC ENVIRONMENTAL TECHNOLOGIES
13550 N U.S. HIGHWAY 93
LAS VEGAS, NV - 89104

Permit Number: NS0093011

Location: APEX BIOREMEDIATION FACILITY & LIQUIDS SOLIDIFICATION AREA,
CLARK
13550 N U.S. HIGHWAY 93, LAS VEGAS, NV - 89165
LATITUDE: 36.3875, LONGITUDE: -114.870556
TOWNSHIP: 18 S, RANGE: 64 E, SECTION: 18

Outfall / Well Num	Outfall / Well Name	Location Type	Well Log Num	Outfall City	Outfall State	Outfall Zip	Outfall County	Latitude	Longitude	Receiving Water
001	BIOREMEDIATION FACILITY - PETROLEUM CONTAMINATED SOILS	External Outfall		LAS VEGAS	NV	89165	CLARK	36.3875	-114.870556	GROUNDWATER
002	BIOREMEDIATION FACILITY - NON-HAZARDOUS LIQUIDS AND PETROLEUM	External Outfall		LAS VEGAS	NV	89165	CLARK	36.3875	-114.870556	GROUNDWATER
003	LIQUID WASTE SOLIDIFICATION AREA	External Outfall		LAS VEGAS	NV	89165	CLARK	36.3875	-114.870556	GROUNDWATER
004	SUM OF ALL ACCEPTED LIQUIDS	Sum		LAS VEGAS	NV	89165	CLARK	36.3875	-114.870556	GROUNDWATER
MW5	MONITORING WELL MW5	Monitoring Well		LAS VEGAS	NV	89165	CLARK	36.3875	-114.870556	GROUNDWATER

General:

The Permittee, Republic Environmental Technologies, owns and operates the Apex Bioremediation Facility (ABF) at the Apex Landfill in Clark County, Nevada. The ABF treats non-hazardous petroleum contaminated soil and liquids and non-hazardous non-petroleum based liquids. The ABF currently extends over an 8 acre area that consists of ten (10) 100-foot by 400-foot treatment cells and a staging area, all of which is double lined by 60-mil high-density polyethylene (HDPE) liners with provisions for detection of leaks and collection of leachate. This renewal consists of a permit modification that includes the addition of an eleventh cell, which will have an area of 7.13 acres.

Non-hazardous petroleum contaminated liquids are evaporated or tilled into soil to concentrate the petroleum sufficiently for biological treatment. The petroleum contaminated soils are treated using a biological land farming process, whereby the soil is spread, fertilized, watered, and inoculated with a bacterial mixture that consumes hydrocarbon content. The process is maintained by periodic watering and disking until the treatment goal is met. The treated material is disposed of or used as cover at the adjacent landfill.

Non-hazardous non-petroleum based liquids are treated at the Liquid Solidification Area (LSA). The liquid waste is placed into borrow areas where the liquids are absorbed and blended into surface soils. The liquid solidification site is prepared by ripping the ground surface, allowing liquid waste to readily absorb into the surface soils. Clean soils and/or approved materials (i.e. saw dust, wood chips, or auto fluff) may be used to aid in the solidification process. Blending activities are conducted until free liquids are no longer present. The final product is commingled for disposal or used for cover at the adjacent Apex landfill.

Liquid waste received at the facility must be approved in accordance with the Republic Environmental Technologies Operations & Maintenance (O&M) manual procedures for profiling and waste acceptance. Prior to issuing approval to process non-hazardous liquid waste, analytical testing of the waste stream is performed to determine whether the mixture is hazardous or not. Analysis of specified waste streams or types may be waived in accordance with the Division reviewed O&M manual. Records of analytic results will be kept by the permittee in accordance with the records management practices described in the Division reviewed O&M manual. Waste streams acceptable for processing are issued "Waste Approval Numbers" and then maintained by the Republic Environmental Technologies waste tracking program. Liquid waste that has not been through the profile and waste acceptance process shall not be disposed of at the facility.

This permit, NS0093011, does not regulate activities performed by the permittee within the Republic Environmental Technologies Apex Landfill managed areas. All bioremediation and solidification end product materials used for cover placement or comingling with solid waste in the managed areas of the Apex Landfill must meet the permit criteria for such designated use as required by the Southern Nevada Health District. The permit limits the accepted liquid flow to 0.499 million gallons per day of liquid waste at the ABF and LSA combined. The permit modification will not require a change to flow limit.

Discharge Characteristics:

The discharge consists of non-hazardous petroleum contaminated liquids and non-hazardous non-petroleum contaminated liquids. This facility is designed to prevent liquid discharges to groundwaters of the State.

Receiving Water:

While the facility is designed so that liquids are not discharged to groundwater, the receiving water is considered to be groundwater of the State. Depth to groundwater reported by the Permittee is 520 feet, at an elevation of 1655 feet above mean sea level. The groundwater flow is to the northwest.

Summary of Changes From Previous Permit:

The Permittee will be constructing a new evaporation pond (Cell 11) at the facility. The construction will take place over the next several years, in three phases. The new cell will be approximately 7.13 acres in size when completed. The new cell will not affect the permitted limit of liquids accepted for treatment.

Groundwater Monitoring Wells Table for Sample Location 005 (Monitoring Well - Mw5) To Be Reported Annually^[5]

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Methyl tert-butyl ether	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Vinyl chloride	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Trichlorofluoromethane	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Trichloroethylene	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
trans-1,3-Dichloropropene	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
trans-1,2-Dichloroethylene	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Toluene	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Tetrachloroethylene	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Methylene chloride	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Ethylbenzene	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Dibromochloromethane	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
			M&R				

Groundwater Monitoring Wells Table for Sample Location 005 (Monitoring Well - Mw5) To Be Reported Annually^[5]

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
cis-1,3-Dichloropropene	Daily Maximum		Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Methyl chloride (Chloromethane)	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Chloroform	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Chloroethane	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Chlorobenzene	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Carbon tetrachloride	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Methyl bromide (Bromomethane)	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Bromoform	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Dichlorobromomethane	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Benzene	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
2-Chloroethyl vinyl ether, (mixed)	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Depth to water level ft below landsurface ^[1]	Annual Maximum	M&R Feet (ft)		Groundwater	005	Annual	VISUAL ^[2]

Groundwater Monitoring Wells Table for Sample Location 005 (Monitoring Well - Mw5) To Be Reported Annually^[5]

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
1,4-Dichlorobenzene	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
1,3-Dichlorobenzene	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
1,2-Dichloropropane	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
1,2-Dichloroethane	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
1,2-Dichlorobenzene	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
1,1-Dichloroethylene	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
1,1-Dichloroethane	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
1,1,2-Trichloroethane	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
1,1,2,2-Tetrachloroethane	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
1,1,1-Trichloroethane	Daily Maximum		M&R Micrograms per Liter (ug/L)	Groundwater	005	Annual	DISCRT
Hydrocarbons, total petroleum ^[4]	Annual Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	005	Annual	DISCRT

Groundwater Monitoring Wells Table for Sample Location 005 (Monitoring Well - Mw5) To Be Reported Annually^[5]

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Water level relative to mean sea level ^[3]	Annual Maximum	M&R Feet (ft)		Groundwater	005	Annual	CALCTD

Notes (Groundwater Monitoring Wells Table):

1. Depth to Groundwater (feet).
2. Field measurement.
3. Groundwater Elevation (feet above mean sea level).
4. EPA Method 8015B, full range, C6-C40.
5. Collected 4th quarter each year.

**NS OTHER - Discharge Limitations Table for Sample Location 004 (Sum Of All Accepted Liquids)
To Be Reported Monthly**

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Flow, total	Daily Maximum	<= 0.499 Million Gallons (Mgal)		Industrial Influent	004	Once Per Batch	ESTIMA
Flow, total	Monthly Total	M&R Million Gallons (Mgal)		Industrial Influent	004	Once Per Batch	ESTIMA

Ponds / Rapid Infiltration Basins for Sample Location 001 (Bioremediation Facility - Petroleum Contaminated Soils) To Be Reported Monthly^[1]

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Area inspection visual ^[7]	Positive Results	M&R Pass=0 Fail=1 (pass/fail)		See Footnote ^[8]	001	Weekly	VISUAL
Volume, total ^[6]	Event Total	M&R Cubic Feet per Day (ft ³ /d)		See Footnote ^[3]	001	Once Per Batch	ESTIMA
Liner Leakage Rate ^[4]	Monthly Maximum	M&R Gallons per Acre per Day (gal/acre/d)		See Footnote ^[5]	001	Weekly	DISCRT
Hydrocarbons, total petroleum ^[2]	Event Total		<= 100 Milligrams per Kilogram (mg/kg)	See Footnote ^[3]	001	Once Per Batch	COMPOS

Notes (Ponds / Rapid Infiltration Basins):

1. In addition to the Parameters listed above, report the following:
 - Total weight of in-state waste accepted per month (tons)** - limit: M&R. [each load/scale].
 - Total weight of out-of-state waste accepted per month (tons)** - limit: M&R. [each load/scale].
 - Presence of liquid in leak detection system (yes/no)** - limit: M&R. [leak detection pipe/weekly/discrete].
2. Maximum TPH concentration in treated soil and soil-water mixtures (mg/kg)
3. Treatment cells.
4. Presence of liquid in Leak Detection System (gal/acre/day).
5. Leak Detection Pipe.
6. Maximum volume of material within each treatment cell (cubic yards).
7. Containment area inspections.
8. Containment area.

Ponds / Rapid Infiltration Basins for Sample Location 002 (Bioremediation Facility - Non-Hazardous Liquids And Petroleum Contaminated Liquids) To Be Reported Monthly^[1]

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Hydrocarbons, total petroleum ^[2]	Event Total		M&R Milligrams per Liter (mg/L)	See Footnote ^[3]	002	Once Per Batch ^[4]	BATCH ^[5]
Area inspection visual ^[8]	Positive Results	M&R Pass=0 Fail=1 (pass/fail)		See Footnote ^[9]	002	Weekly	VISUAL
Liner Leakage Rate ^[6]	Monthly Maximum	M&R Gallons per Acre per Day (gal/acre/d)		See Footnote ^[7]	002	Weekly	DISCRT
Total Petroleum Hydrocarbons - Gasoline ^[10]	Event Total		M&R Milligrams per Liter (mg/L)	See Footnote ^[3]	002	Once Per Batch	BATCH

Notes (Ponds / Rapid Infiltration Basins):

1. In addition to the Parameters listed above, the following will also be monitored:
 - Total gallons of in-state liquid waste accepted per month (gal)** - limit: M&R. [each load/calculate estimated load measure].
 - Total gallons of out-of-state liquid waste accepted per month (gal)** - limit: M&R. [each load/calculate estimated load measure].
 - Presence of liquid in leak detection system (yes/no)** - limit: M&R. [leak detection pipe/weekly/inspection].
2. Maximum TPH concentration in liquid waste (mg/l).
3. Treatment cells.
4. Each load or profile record.
5. Analysis record.
6. Volume fluid removed from Leak Detection System (gal/acre/day)
7. Leak Detection Pipe.
8. Containment area inspection.
9. Containment area.
10. Concentration in Liquid Waste

Ponds / Rapid Infiltration Basins for Sample Location 003 (Liquid Waste Solidification Area) To Be Reported Monthly^[1]

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Area inspection visual ^[5]	Positive Results	M&R Pass=0 Fail=1 (pass/fail)		See Footnote ^[6]	003	Weekly	VISUAL
pH	Daily Maximum		M&R Standard Units (SU)	See Footnote ^[2]	003	Once Per Batch ^[3]	BATCH ^[4]
Hydrocarbons, total petroleum	Daily Maximum		M&R Milligrams per Liter (mg/L)	See Footnote ^[2]	003	Once Per Batch ^[3]	BATCH ^[4]

Notes (Ponds / Rapid Infiltration Basins):

1. In addition to the above parameters, the following is required to be monitored:

Free liquids - limit: M&R.
[conditioned soil/each removal event/paint filter test]

- 2. Liquid acceptance
- 3. Each load or profile record
- 4. Analysis record
- 5. Containment area inspections
- 6. Containment area

Rationale for Permit Requirements:

Bioremediation Facility: The limit for the maximum TPH concentration of treated soil is 100 mg/kg, which is the action level used by the Division's Bureau of Corrective Actions. The amount of waste accepted is reported for tracking purposes. Weekly inspections of the leak collection system, and removal of any collected liquid, isolates the outer liner from liquid contact, thereby preventing leakage to the environment. The nearby production well is tested annually for TPH and volatile organics.

Liquids Solidification Area: Non-hazardous and non-petroleum based liquid waste accepted at the LSA must be solidified in accordance with the process described in the Division reviewed O&M manual before being removed and used on Apex Landfill managed areas or commingled for disposal at Apex Landfill. The approved solidification process eliminates free liquids.

Out of state waste may be accepted according to the Division reviewed O&M manual and upon notification to the Southern Nevada Health District.

Special Conditions:

SA – Special Approvals / Conditions Table

Item #	Description
1	<p>Hazardous Waste: Screen and accept only non-hazardous loads. Only non-hazardous and non-petroleum based liquids may be accepted at the LSA. Liquids having incidental TPH shall be sent to the ABF for treatment. All waste shall be screened for hazardous characteristics per applicable state and federal requirements. Identify the source of all liquids accepted and maintain a records management program for tracking per the Division-reviewed Operations and Maintenance (O&M) manual. No out of state waste shall be accepted without prior notification to the Southern Nevada Health District. Out of state waste shall be tracked through the process to final disposition.</p> <p>For the purpose of liquid solidification and conditioned soils placement management, TPH concentrations known by the Permittee or generator to be originating from non-petroleum sources such as fat, grease, and cooking oils are waived from TPH analysis and TPH limitations of this permit because such liquids are known to produce false positive petroleum based TPH values. Such TPH waived liquids being accepted by the Permittee are tallied as a portion of the total daily maximum volume of liquids allowed to be received by the Permittee.</p>
2	<p>Waste Load Information: The Permittee shall collect and maintain the following information for each waste load accepted: receiving date, weight and/or volume, truck identification, transporter, source of waste, pre-acceptance and pre-treatment analytical data, manifests, out of state letters of non-hazard, and generator declarations of non-hazard.</p>
3	<p>Leak Detection System: The leak detection system must be inspected weekly. Any liquid found in the leak detection system shall be removed. Incidence of leakage, volumes removed, and final disposition, shall be reported to show that the system is maintained and managed as described in the Division-reviewed O&M manual.</p>
4	<p>Containment Areas:</p> <ul style="list-style-type: none"> i. The containment areas shall be inspected weekly, at a minimum, for erosion, deterioration, or malfunction of containment structures. If the containment is breached, acceptance of material shall cease, the Division shall be notified by 5:00 pm of the following business day, and a repair plan shall be submitted to the Division for approval. ii. A summary of the weekly inspections shall be reported. iii. The containment areas shall contain the 25-yr 24-hr storm and withstand the 100-yr 24-hr flood at their respective operating locations.
5	<p>Spills: Any spills resulting from transfer operations and truck and container wash water shall be retained within the containment areas.</p>
6	<p>Paint Filter Test: (EPA method 9095B) shall be conducted, in accordance with the Division-reviewed O&M manual, to verify that the solidification treatment of soils and liquids has resulted in a solid waste and does not contain any free liquids.</p>
7	<p>Liquid waste is prohibited from running off the Permittee's property and from running or being discharged into any surface drainage. Solidification shall be conducted in accordance with management practices which prevent fluid from running off the facility property. On-site processing of liquids being solidified with native soil and approved materials shall be conducted in a manner such that liquids and conditioned soils remain fully contained on site.</p>
8	<p>Liquid waste shall be solidified and removed in a timely manner to minimize possible migration of fluid from the designated solidification areas. All final liquid processed soils/materials must be used as cover material placement over Apex Landfill, or commingled for disposal at Apex Landfill. The Permittee shall manage materials generated by solidification of liquids having an incidental TPH concentration in accordance with the solidification process described in the Division approved O&M</p>

Item #	Description
	Manual.
9	The designated LSA on the property may be changed during this permit cycle to other approved areas on the property by notification to the Division in accordance with permit Part B.PB.7.1. The designated areas shall be adequately described in the O&M Manual by latitude and longitude coordinates. The perimeter of these areas shall be field identified for operational control and to aid site inspection by the Division.
10	Waste loads determined to be hazardous waste shall be prohibited from off-loading at the facility. Waste loads screened at the facility that are determined to be hazardous waste shall be rejected, and the Division and appropriate local agencies will be notified within 24 hours of the occurrence. The notification shall include information surrounding the rejection, and the waste characterization of the load.

Flow:

The flow is based on the cumulative volume of liquid that enters the facility, which is limited to 0.499 million gallons per day. The flow limit will not be adjusted as a result of the permit modification.

Corrective Action Sites:

There are no Bureau of Corrective Actions sites within one mile of this facility.

Wellhead Protection Program:

The facility is within the 3000' but outside the 1000' Drinking Water Protection Area (DWPA) of one public water supply well, W01 (NV0000379) owned by Apex Regional Waste Management Center. This well is considered highly vulnerable to synthetic organic compounds (SOCs) based on Source Water Assessment and Protection results. A Wellhead Protection Area has not been established for this area.

Schedule of Compliance:

SOC – Schedule of Compliance Table

Item #	Description	Due Date
1	The Permittee shall submit two copies of an updated operations and maintenance (O&M) manual for the bioremediation and liquid waste solidification activities for review by the Division. The O&M manual shall be prepared by a qualified individual.	12/9/2015

Deliverable Schedule:

DLV– Deliverable Schedule for Reports, Plans, and Other Submittals

Item #	Description	Interval	First Scheduled Due Date
1	Quarterly DMRs	Quarterly	10/28/2015
2	Annual Report	Annually	1/28/2016

Procedures for Public Comment:

The Notice of the Division's intent to issue a permit authorizing the facility to discharge to groundwater of the State of Nevada subject to the conditions contained within the permit, is being sent to the **Las Vegas Review Journal** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing until 5:00 P.M. **9/1/2015**, a period of 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator of EPA Region IX or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted. Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determined to be appropriate. All public hearings must be conducted to accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Proposed Determination:

The Division has made the tentative determination to issue / re-issue the proposed 5-year permit.

Prepared by: **Peter Lassaline**

Date: **7/27/2015**

Title: **Environmental Scientist**