

**City of Palo Alto Landfill**  
**TITLE V SEMI-ANNUAL MONITORING REPORT**

<b>Site:</b> City of Palo Alto Landfill	<b>Facility ID#:</b> A2721
<b>Permitted Unit:</b> S-1 Palo Alto Landfill with Gas Collection System and A-3 Landfill Gas Flare	<b>Reporting Period:</b> from 12/1/2011 through 5/31/2012

<b>SITE:</b> City of Palo Alto Landfill	<b>FACILITY ID#:</b> A2721
<b>REPORTING PERIOD:</b> from 12/1/2011 through 5/31/2012	

**List of Permitted Sources and Abatement Device**

Permit Unit Number	Equipment Description
S-#	Description
S-1	Palo Alto Landfill with Gas Collection System and A-3 Landfill Gas Flare
S-5	Wood Grinder and A-5 Water Sprays
S-6	Diesel Engine, Driver for S-5 Wood Grinder
S-7	Trommel Screen and A-5 Water Sprays
S-8	Diesel Engine Driver for S-7 Trommel Screen (Abated by S-9 Diesel Engine Driver)
S-9	Diesel Engine Driver for S-7 Trommel Screen abated by A-9 DPF with an efficiency of 83%
A-3	Landfill Gas Flare, Sur Lite, 30 MM BTLU/hour, 1,000 cfm of landfill gas
A-5	Water Sprays

Notes: Diesel Engine S-8 was permanently taken out of service in August 2007 and replaced with S-9. S-8 is no longer in use.

Wood Grinder S-5 and the Engine S-6 broke down on April 7, 2010 and Rental Portable Equipment Registration Program (PERP) grinding equipment has been used, as-needed, in place of S-5 since that time until the Wood Grinder Engine S-6 was repaired and came back online March 1, 2011. A source test was performed on July 5, 2011.

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Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Collection System Installation Dates	BAAQMD 8-34-501.7 and 501.8 and Permit Condition #1028, Parts 12a-c, 12e-f	Records	Periodic / Event basis	BAAQMD 8-34-304.2	For Active Areas: Collection system components must be installed and operating by 5 years + 60 days after initial waste placement	Continuous	N/A
Collection System Installation Dates	BAAQMD 8-34-501.7 and 501.8 and Permit Condition #1028, Parts 12a-c, 12e-f	Records	Periodic / Event basis	BAAQMD 8-34-304.3	For Any Uncontrolled Areas or Cells: Collection system components must be installed and operating within 60 days after the uncontrolled area or cell accumulates 1,000,000 tons of decomposable waste	Continuous	N/A
Gas Flow	BAAQMD 8-34-501.10 and 508	Gas Flow Meter and Recorder (every 15 minutes), and Records of Landfill Gas Flow Rates, Collection and Control Systems Downtime, and Collection System Components	Continuous	BAAQMD 8-34-301 and 301.1	Landfill gas collection system shall operate continuously and all collected gases shall be vented to a properly operating control system	Continuous	N/A
Gas Flow	BAAQMD 8-34-501.1, 501.2, 501.10 and 508 and Permit Condition #1028, Part 17f	Records of Landfill Gas Flow Rates, Collection and Control Systems Downtime, and Collection System Components	Continuous Periodic / Event basis	BAAQMD Permit Condition #1028, Parts 5, 6, and 7	Landfill gas collection system shall operate continuously and all collected gases shall be vented to a properly operating control system	Continuous	N/A

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Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Collection and Control Systems Shutdown Time	BAAQMD 8-34-501.1	Operating Records	Periodic / Daily	BAAQMD 8-34-113.2	240 hours per year and 5 consecutive days	Continuous	N/A
Periods of Inoperation for Parametric Monitors	BAAQMD 1-523.4	Operating Records for All Parametric Monitors (for gas flow and temperature monitors)	Periodic / Daily	BAAQMD 1-523.2	15 consecutive days per incident and 30 calendar days per 12-month period	Continuous	N/A
Continuous Monitors	40 CFR 60.7(b)	Operating Records for All Continuous Monitors (for gas flow and temperature monitors)	Periodic / Daily	40 CFR 60.13(e)	Requires Continuous Operation except for breakdowns, repairs, calibration, and required span adjustments	Continuous	N/A
Startup Shutdown or Malfunction Procedures	40 CFR 63.1980(a-b)	Records (all occurrences, duration of each, and corrective actions)	Periodic / Event basis	40 CFR 63.6(e)	Minimize Emissions by Implementing SSM Plan	Continuous	N/A
Wellhead Pressure	BAAQMD 8-34-414, 501.9 and 505.1 and Permit Condition #1028, Part 17h	Monthly Inspection and Records	Periodic / Monthly	BAAQMD 8-34-305.1	< 0 psig	Continuous	N/A
Temperature of Gas at Wellhead	BAAQMD 8-34-414, 501.9 and 505.2 and Permit Condition #1028, Part 17h	Monthly Inspection and Records	Periodic / Monthly	BAAQMD 8-34-305.2	< 55 o C	Continuous	N/A
Gas Concentration at Wellhead	BAAQMD 8-34-414, 501.9 and 505.3 or 505.4 and Permit Condition #1028, Part 17h	Monthly Inspection and Records	Periodic / Monthly	BAAQMD 8-34-305.3 or 305.4	N2 < 20% OR O2 < 5%	Continuous	N/A

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Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Well Shutdown Limits	BAAQMD 8-34-116.5 and 501.1	Records	Periodic / Daily	BAAQMD 8-34-116.2	No more than 5 wells at a time or 10% of total collection system, whichever is less	Continuous	N/A
Well Shutdown Limits	BAAQMD 8-34-117.5 and 501.1	Records	Periodic / Daily	BAAQMD 8-34-117.4	No more than 5 wells at a time or 10% of total collection system, whichever is less	Continuous	N/A
Well Shutdown Limits	BAAQMD 8-34-117.6 and 501.1	Records	Periodic / Daily	BAAQMD 8-34-117.5	24 hours per well	Continuous	N/A
TOC (Total Organic Compounds Plus Methane)	BAAQMD 8-34-501.6 and 503 and Permit Condition #1028, Part 17h	Quarterly Inspection of collection and control system components with portable analyzer and Records	Periodic / Quarterly	BAAQMD 8-34-301.2	1000 ppmv as methane (component leak limit)	Continuous	N/A
TOC	BAAQMD 8-34-415, 416, 501.6, 506 and 510 and Permit Condition #1028, Part 17h	Monthly Visual Inspection of Cover, Quarterly Inspection with Portable Analyzer of Surface, Various Reinspection Times for Leaking Areas, and Records	Periodic / Monthly, Quarterly, Event basis	BAAQMD 8-34-303	500 ppmv as methane at 2 inches above surface	Continuous	N/A
Non-Methane Organic Compounds (NMOC)	BAAQMD 8-34-412 and 8-34-501.4 and Permit Condition #1028, Parts 15 and 17h	Annual Source Tests and Records	Periodic / Annual	BAAQMD 8-34-301.3	98% removal by weight OR <30 ppmv, dry basis @ 3% O2 expressed as methane (applies to A-3 only)	Continuous	N/A

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Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Temperature of Combustion Zone (CT)	BAAQMD 8-34-501.3 and 507,	Temperature Sensor and Recorder (continuous)	Continuous	Permit Condition #1028, Part 9	CT > 1420 °F, averaged over any 3-hour period (applies to A-3 only)	Continuous	N/A
Total Carbon	BAAQMD Permit Condition #1028, Part 3	Surface VOC Analysis and Records	Periodic / Event basis	BAAQMD 8-2-301, 8-40-205, 8-40-604	15 pounds/day or 300 ppm, dry basis (applies only to aeration of or use as cover soil of soil containing < 50 ppmv of volatile organic compounds)	Continuous	NA
Opacity	BAAQMD Condition #1028, 4, Part 17d	Records of all site watering and road cleaning events	Periodic / Event basis, Daily	BAAQMD 6-301,	Ringelmann No. 1 for < 3 minutes/hr (applies to S-1)	Continuous	N/A
Opacity	None	None	None	BAAQMD 6-301	Ringelmann No. 1 for < 3 minutes/hr (applies to A-3)	Continuous	N/A
FP	None	None	None	BAAQMD 6-301	< 0.15 grains/dscf (applies to A-3 only)	Continuous	N/A
NOx	BAAQMD Condition #1028, Part 15 and 17h	Annual Source Test and Records	Periodic / Annual	BAAQMD Condition #1028, Part 11	< 32 ppmv at 15% O2, dry	Continuous	N/A
CO	BAAQMD Permit Condition #1028, Part 15 and 17h	Annual Source Test and Records	Periodic / Annual	BAAQMD Permit Condition #1028, Part 12	< 208 ppmv @ 15% O2, dry	Continuous	N/A
SO <sub>2</sub>	None	None	None	BAAQMD 9-1-301	Property Line Ground Level Limits ≤ 0.5 ppm for 3 minutes and ≤ 0.25 ppm for 60 min. and ≤ 0.05 ppm for 24 hours (applies to A-3 only)	Continuous	N/A

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Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
SO <sub>2</sub>	Permit Condition #1028, Part 14 and 17h	Sulfur analysis of landfill gas	Periodic / Quarterly	BAAQMD 9-1-302	< 300 ppm (dry basis) (applies to A-3 only)	Continuous	N/A
Total Sulfur Content in LFG	Permit Condition #1028, Part 14 and 17h	Sulfur analysis of landfill gas	Periodic / Quarterly	Permit Condition #1028, Part 14	≤ 1300 ppmv (expressed as H <sub>2</sub> S)	Continuous	N/A
H <sub>2</sub> S	None	NA	None	BAAQMD 9-2-301	Property Line Ground Level Limits: ≤ 0.6 ppm averaged over 3 min. and ≤ 0.03 ppm for 60 min. and < 0.05 ppm averaged over 60 min.	Continuous	N/A
Amount of Waste Accepted	Permit Condition #1028, Part 17a	Records	Periodic / Daily	Permit Condition #1028, Part 1	≤ 400 tons/day and ≤ 5,830,000 tons (cumulative amount of wastes) and ≤ 7,759,000 yd <sup>3</sup> (cumulative amount of all wastes and cover materials)	Continuous	N/A
Heat Input	Permit Condition #1028, Part 8 and 17g	Records	Periodic / Daily	Permit Condition #1028, Part 8	≤ 720 MMBTU/day and ≤ 262,800 MMBTU/yr	Continuous	N/A
Total Chlorinated Compounds in Landfill Gas	Permit Condition #1028, Part 16 and 17h	Annual Gas Characterization Analysis and Records	Periodic / Annual	Permit Condition #1028, Part 13	< 104 ppmv, dry	Continuous	N/A

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<b>Site:</b> City of Palo Alto Landfill	<b>Facility ID#:</b> A2721
<b>Permitted Unit:</b> S-5 Wood Grinder and A-5 Water Sprays	<b>Reporting Period:</b> from 12/1/2011 through 5/31/2012

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Opacity	Permit Condition #20476, Part 5	Visual Observation of Operations	Periodic / Event basis	BAAQMD Regulation 6-301	Ringelmann 1.0 for 3 minutes in any hour	Continuous	N/A
Opacity	Permit Condition #20476, Part 5	Visual Observation of Operations	Periodic / Event basis	Permit Condition #20476, Part 4	Ringelmann 1.0	Continuous	N/A
FP	None	None	None	BAAQMD Regulation 6-311	40 pounds/hour	Continuous	N/A
Wood Throughput	Permit Condition #20476, Part 2	Records	Periodic / Daily	Permit Condition #20476, Part 1	50,000 tons/year	Continuous	N/A

Note: Wood Grinder S-5 and S-6 broke down on April 7, 2010 and Rental Portable Equipment Registration Program (PERP) grinding equipment has been used, as-needed, in place of S-5 since that time until the Wood Grinder S-6 was repaired and came back online March 1, 2011. A source test was performed on July 5, 2011.

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<b>Site:</b> Palo Alto Landfill	<b>Facility ID#:</b> A2721
<b>Permitted Unit:</b> S-6 Diesel Engine, Driver for S-5 Wood Grinder	<b>Reporting Period:</b> from 12/1/2011 through 5/31/2012

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limits	Compliance	Corrective Actions Taken
Opacity	Permit Condition #20477, Part 8	Visual Observation of Exhaust	Periodic / Event basis	BAAQMD Regulation 6-301	Ringelmann 1.0 for 3 minutes any hour	Continuous	N/A
FP	None	None	None	BAAQMD Regulation 6-301	0.15 grains/dscf	Continuous	N/A
POC	Permit Condition #20477, Part 7	Annual Source Test	Periodic / Annual	Permit Condition #20477, Part 3	1.5 grams/bhp-hr	Continuous	N/A
NOx	Permit Condition #20477, Part 7	Annual Source Test	Periodic / Annual	Permit Condition #20477, Part 4	6.9 grams/bhp-hr	Continuous	N/A
CO	Permit Condition #20477, Part 7	Annual Source Test	Periodic / Annual	Permit Condition #20477, Part 5	2.75 grams/bhp-hr	Continuous	N/A
SO <sub>2</sub>	None	None	None	BAAQMD Regulation 9-1-301	Property line Ground Level limits: ≤ 0.5 ppm for 3 minutes and ≤ 0.225 ppm for 60 min. and ≤ 0.05 ppm for 24 hours	Continuous	N/A
SO <sub>2</sub>	Permit Condition #20477, Part 6	Records for Fuel Sulfur Content	Periodic / Event basis	BAAQMD Regulation 9-1-304	Fuel Sulfur Limit 0.5%	Continuous	N/A
SO <sub>2</sub>	Permit Condition #20477, Part 6	Records for Fuel Sulfur Content	Periodic / Event basis	Permit Condition #20477, Part 2	Fuel Sulfur Limit 0.05%	Continuous	N/A
Fuel Throughput	Permit Condition #20477, Part 6	Records of Fuel throughput	Periodic / Daily	Permit Condition #20477, Part 1	35,000 gallons/year of diesel oil	Continuous	N/A



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<b>Site:</b> Palo Alto Landfill	<b>Facility ID#:</b> A2721
<b>Permitted Unit:</b> S-7 TROMMEL SCREEN AND A-5 WATER SPRAYS	<b>Reporting Period:</b> from 12/1/2011 through 5/31/2012

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Opacity	Permit Condition #20478, Part 5	Visual Observation of Operations	Periodic / Event basis	BAAQMD Regulation 6-301	Ringelmann 1.0 for 3 minutes in any hour	Continuous	N/A
Opacity	Permit Condition #20478, Part 5	Visual Observation of Operations	Periodic / Event basis	Permit Condition #20478, Part 4	Ringelmann 1.0	Continuous	N/A
FP	None	None	None	BAAQMD Regulation 6-311	40 pounds/hour	Continuous	N/A
Wood Throughput	Permit Condition #20478, Part 2	Records	Periodic / Daily	Permit Condition #20476, Part 1	50,000 tons/year	Continuous	N/A

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### TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Palo Alto Landfill	<b>Facility ID#:</b> A2721
<b>Permitted Unit:</b> S-9* DIESEL ENGINE, DRIVER FOR S-7 <b>TROMMEL SCREEN</b>	<b>Reporting Period:</b> from 12/1/2011 through 5/31/2012

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Portable exemption	Permit Condition #24439, Part 1	None	None	BAAQMD Regulation 2-1-220, 1-3, 2-1-220.10, CCR 93116.2(a)(28), 40 CFR 1068.30	Shall not operate the engine in one on-site location more than 12 consecutive months	Continuous	N/A
SO <sub>2</sub>	Permit Condition #24439, Part 2	None	Continuous	BAAQMD Regulation 2-5-302, CFFR 93116.3(a)	<0.0015% sulfur by weight	Continuous	N/A
Fuel Throughput	Permit Condition #24439, Part 3	None	Periodic / Annual	BAAQMD Regulation 2-5-302; Cumulative Increase, Offsets	Operating time not exceed 1040 hrs, Fuel combusted not exceed 11,071 gallons per year	Continuous	N/A
CO	Permit Condition #24439, Part 4	None	Continuous / Daily	Tier 3, Cumulative Increase	Not exceed 8 hrs during a day, CO not exceed 3.7 g/bhp-hr	Continuous	N/A
NOx	Permit Condition #24439, Part 5	None	Continuous	BACT is Tier 3 equivalent	3.0 grams/bhp-hr	Continuous	N/A
Totalizing Meter	Permit Condition #24439, Part 6	None	Continuous	Cumulative Increase, Offsets, CCR 93116.4c(2)(A)	Effective January 1, 2012, equip with non-resettable totalizing meter	Continuous	N/A
Recordkeeping and Monitoring	Permit Condition #24439, Part 7	Hours, days and monthly	Periodic / Event basis	BAAQMD Regulation 2-1-220 and 2-5-302 and CCR 93116.2(a)(28), 93116.3(b)(2)(B), 40 CFR 1068.30	Recordkeeping	Continuous	N/A

\*S-8, the diesel engine driver for S-7 was taken out of operation in August 2007. The permit to operate for diesel engine, S-9, was issued on August 31, 2009. S-9 replaced S-8 as driver for S-7.