

SHELL OIL COMPANY

22



Reorder No. 912 1/8

PARK BRAND FOLDER
MEDIUM HEAVY WEIGHT

KE 0021220

Mr. R. L. Goltz

New York Division

M. D. Ritchie

Westfield, N. J.

Shell Oil Company, Sewaren, N. J.
Tank-cleaning, Tank # 85

DEC. 12 1943

Dear Roy:

On December 6 the New York Division office received a tank-cleaning notification from H.B. Quigley, plant superintendent at Shell's Sewaren, N. J., terminal. Notice was given that tank-cleaning would begin and entrances be made on December 7. Mr. Turnley requested me to attend this cleaning.

Accordingly I went to Sewaren on Tuesday, December 7th, arriving at 8:45 A. M. Mr. Quigley was not at the plant, being confined to his home with broken ribs and a severe cold. Informed that a Mr. Gilman, plant engineer, would be in charge during Quigley's absence I had a talk with him. We discussed safety precautions during tank-cleaning operations and I learned that Gilman had attended at course in Safety Procedure at Rutgers University a couple of years before. He was thoroughly conversant with our regulations.

The tank in question, number 85, is two years old and is a diaphragm roof type of 110,000 bbl. capacity. It has two side manholes (diametrically opposite), and a manhole in the roof. Until a little over four months ago the tank had been in burning oil service (kerosene, light fuel oil). At that time the tank was washed and pumped dry and put into leaded gasoline storage service, 80 Octane. It is not a blending tank.

Beginning a week previous to December 7 the tank had been airing, aided by an electric eductor pump fitted to the roof manhole. This pump or blower sucks air in through the side manholes and out the roof manhole at the rated capacity of 3,000 cubic feet per hour. (On December 7 and 11 I was able to note the effectiveness of this circulation visually by movement of dust-motes in the sunlight into the side manholes. A piece of Kleenex when held in the manhole also tended to be drawn into the tank.) The air blower aforementioned was in continuous operation through the week of December 6th with the exception of four-hour periods each day from 4:00 P.M. to 8:00 P.M. when it was shut down for lubrication and cooling purposes. Prior to December 7th the

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tank had been washed with fire-hose from the outside, and pumped dry with a sludge pump five distinct times. The reason for the tank-cleaning was the need for repairs to the diaphragm roof. The repairs to be done by the builder, Chicago Bridgg and Iron, and involving the use of hot-welding apparatus. (See appended sketch.)

After this discussion with Gilman I met Mr. Zehrner, plant Safety man. Zehrner was to be in charge of and assist in the tank-cleaning operation. He had been foreman in charge of cleaning a leaded tank some two years ago, so he said, and was acquainted with our regulations. On the way to the tank he stopped to pick up safety equipment and appeared with two canister masks. Before going any further I handed him a copy of our regulations and we hashed out the tank-cleaning problem from A to Z, including the difference between lead-free and gas-free, reasons for boots, rubber gloves etc. Zehrner then exchanged the canister masks for complete airline equipment including positive blower, sufficient hose and two masks. That morning Zehrner spent about 45 minutes in the tank with a high pressure hose. A sludge pump was in operation, sucking water and sludge. The discharge hose of the pump was placed in a pit five feet deep and six feet square, with a step up to another pit of the same area but only two feet deep. The heavy deposits settled in the first pit and the liquid spilled over and across the shallower pit into a short ditch which was connected to a drainage ditch running through the property into a settling tank at the edge of a creek which flows into the river. In the afternoon two more hours were spent by Zehrner in hosing the sides and roof of the tank, and then the men cleaned the rubber gear, changed clothes and bathed. On leaving I mentioned that I could not say definitely what time I would appear the next day.

On Wednesday, December 8th, at Mr. Turnley's request I went to Hackensack in the early A.M. to be on hand to inspect a tank at Standard Oil Company of New Jersey's terminal there. This tank was to be repaired and put back into service immediately and was then in process of being cleaned. I called Gilman at Sewaren to tell him that I would not be down there until the afternoon, and cautioned him along safety lines. He stated

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that no work would be done on Tank 85 that day. After entering the tank in Hackensack at 4:15 P.M., and before leaving the Standard plant I called Gilman to tell him that I would have to go to Philadelphia on Thursday, December 9, and again could not definitely say what time I would be on hand at tank 85. He doubted that work would be done on the tank again on Thursday. I went to Philadelphia and observed construction changes in the piping at the aviation blending plant (8500, Philadelphia Yard) of Atlantic Refining Company's Point Breeze refinery.

On Friday, at 8:30 A.M. I called Gilman at Sewaren and ascertained that tank-cleaning would be done on that day. Since I had been requested to observe construction changes in Standard Oil Company of New Jersey's Bayonne aviation Ethyl fluid unloading lines, and I could not be certain just what time I would get to Sewaren I again cautioned Gilman on the observance of our safety regulations.

The work at Bayonne lasted well into the afternoon, and at 3:00 P.M. it became apparent that I could not get to Sewaren before work was stopped (3:30 P.M.). Accordingly I called Gilman again to check on the tank-cleaning and was informed that the job was almost completed and the tank would be ready for my inspection the next morning (Saturday).

I drove to Sewaren Saturday morning, arriving about 9:00 A.M., to find Zehrner waiting for me at the Guard gate. We went right down to Tank 85. As we mounted the firewall I saw a man in ordinary work clothes emerge from a manhole of the tank. I asked him who he was and what he was doing and he told me he was an electrician and was taking out the vapor-proof lamp which had been used in the tank on the previous day. I asked him if he knew that the tank had been in leaded service, had not yet been inspected, and knew that no one should enter such a tank without proper clothing and airline mask until an Ethyl engineer had declared the tank lead-free. He looked strangely at Zehrner, and confessed his ignorance of such facts. I then quizzed Zehrner and he told me that three men had spent about 4½ hours cleaning the tank on Friday without benefit of masks of any sort. The only safety factor had been rubber

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boots, use of Company safety clothing (white) while working, and bath at the end of the work-day. Zehrner then went on to explain that when Gilman requested three laborers for tank-cleaning on Friday, a Harry Miner, foreman of laboring department had automatically been assigned to supervise the work. That he (Zehrner) had explained to Miner the need for airline equipment and rubber gloves, but lacked necessary authority either to force their use or stop the work. That he feared to go over Miner's head because of jealousies and politics. That if Quigley had been on hand in the plant he could have appealed to him.

Zehrner then told me that Quigley had put in an appearance at his desk this morning, and while I proceeded to Quigley's office Zehrner went off to seek Miner. Before I could engage Quigley alone, Zehrner and Miner entered the office. I asked Miner whether or not his men had worn masks and rubber gloves during the tank-cleaning on Friday. He replied in the affirmative. I then asked to speak to Quigley alone, and requested that Zehrner be asked to wait close by. I then asked Quigley either to get to the bottom of the real truth, or to ascertain where the three men in question could be found so that I could talk with them. He stated that the men were to be at Tank #85 in ten or fifteen minutes time and that I was at liberty to speak with them. I went right to the tank and found Miner and two men, Tirpak and Govolitz setting up airline blower and hosing. I took Miner aside and went through the routine explanation of needs for our safety regulations and received his assurances that he would respect them in the future. Then I spoke casually to Tirpak and Govolitz and learned that neither masks nor gloves had been used on Friday, but that the roof air eductor had been in operation continuously. They both seemed in good spirits and discreet questioning elicited no complaints about health from either man. I was told that the third man who had been exposed was a part-time employee (formerly full time) who worked as a paid fireman in the Woodbridge, N.J., fire department. Zehrner said that I could see this man at the firehouse in Woodbridge. Accompanied by Zehrner, who, incidentally is a volunteer member of the same fire company, I went immediately to Woodbridge and we found our man, Messick, reading in the firehouse lounge. For obvious reasons neither

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my business connection nor the real purpose of our visit was disclosed. It was just a friendly visit to show me the firehouse. Messick, when lead into discussing the previous day's work at Shell's plant, said that he had a funny taste in his mouth until a couple of hours past dinner on Friday, but that by the time he went to bed the taste had disappeared. He claimed to be in good health and expressed pleasure in the exercise gained during the tank-cleaning.

Within a half hour from the visit with Messick I was back at the tank farm and there at Tank 85 I found a man named Olsen grinding away at the MSA blower crouched about four feet inside the tank adjacent to the manhole. He complained of the wind and biting cold when I hauled them all out of the tank. Miner appeared in a minute, coming around from the far side of the tank. He said he had left Olsen but a minute or two before, and berated him for not following orders. I then asked ~~Mr~~ Miner to explain to the three men why they were wearing masks, rubber gloves and boots, figuring to judge his absorption of our previous talk and to impress these men, at least, with the story coming from their foreman. Miner did a good job. Then Miner entered the tank to gather up the two remaining buckets of material and I changed my clothes, donning safety clothes, boots and rubber gloves and entered the tank. Inspection proved it to be lead-free.

I saw to it that the sludge pit was covered over and that the men cleaned boots gloves and hosing with water followed by kerosene and then warned them of the urgent necessity for a bath all round, not just then, but at the end of every day of such cleaning.

I now went to Mr. Quigley's office, following a phone conversation with you, during which you impressed upon me the need for close observation of the exposed men during the next five days. With Quigley I reviewed the whole affair and pointed out that our Medical Department

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might wish to examine the men who had been exposed. I emphasized the need for his setting up his organization in such a manner that there could be no possibility of a repetition of the foregoing events. Quigley claimed that these events could not have occurred if he had not been on sick-leave. That eventuality, I responded, was exactly what he must take steps to guard against. He promised to co-operate in that direction and stated that he was calling an immediate meeting of all persons involved in tank-cleaning and Ethyl blending activities. He promised to keep a close watch on Tirpak and Govolitz, and so arrange their work for a few days that he could speak to them several times a day. He would do the same in Messick's case on the days when Messick worked at the plant.

It is obvious that the reasons underlying the exposure of Messick, Tirpak, and Govolitz are the result of lack of and/or improper delegation of authority by Mr. Quigley. Zehrner, a safety man (ex-pipefitter foreman) was given authority to diagnose safety needs, but no power to stop work until remedies were applied. Gilman's authority reached to Miner in that he could assign him to a job but could not specify how the job should be done. Too, Zehrner, having been a foreman in charge of cleaning leaded tank in the past, and being by experience, as well as through our talk of Tuesday, well acquainted with the proper safety procedures, nevertheless lacked the courage of his convictions. Rather than inform Gilman and insist on his co-operation, or call your office even, he fell back weakly on the premise that he had fulfilled his duty when he cautioned Miner.

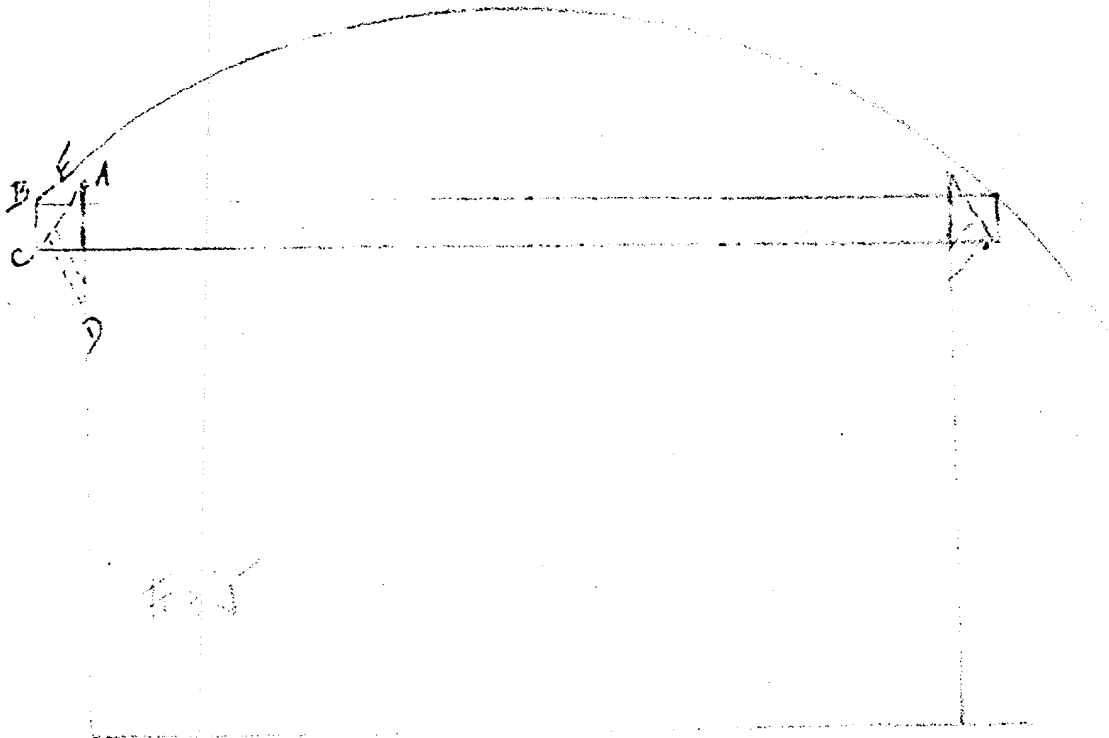
The circumstance of the five-time washing and sludge-pumping, and the presence in operation of the air eductor, coupled with the fact that the tank had been in short-time leaded gasoline service and hence was comparatively clean, was a fortunate combination.

I shall report further on this matter.

Very truly yours,

M. D. Ritchie

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Repairs to be effected upon diaphragm roof of Tanks 85 and 83, Shell Oil Company, Sewaren, N. J.

CA -- Welding of lower plate of roof overhang where cracks have developed due to breathing process of roof.

Installation of series of drains to carry condensate from roof overhang back into tank proper; from CA to D where drain meets and enters tank-side.

Holes to be cut in roof at points between B and E on the circumference, to facilitate installation of baffles on interior of lower roof or overhang plate.

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